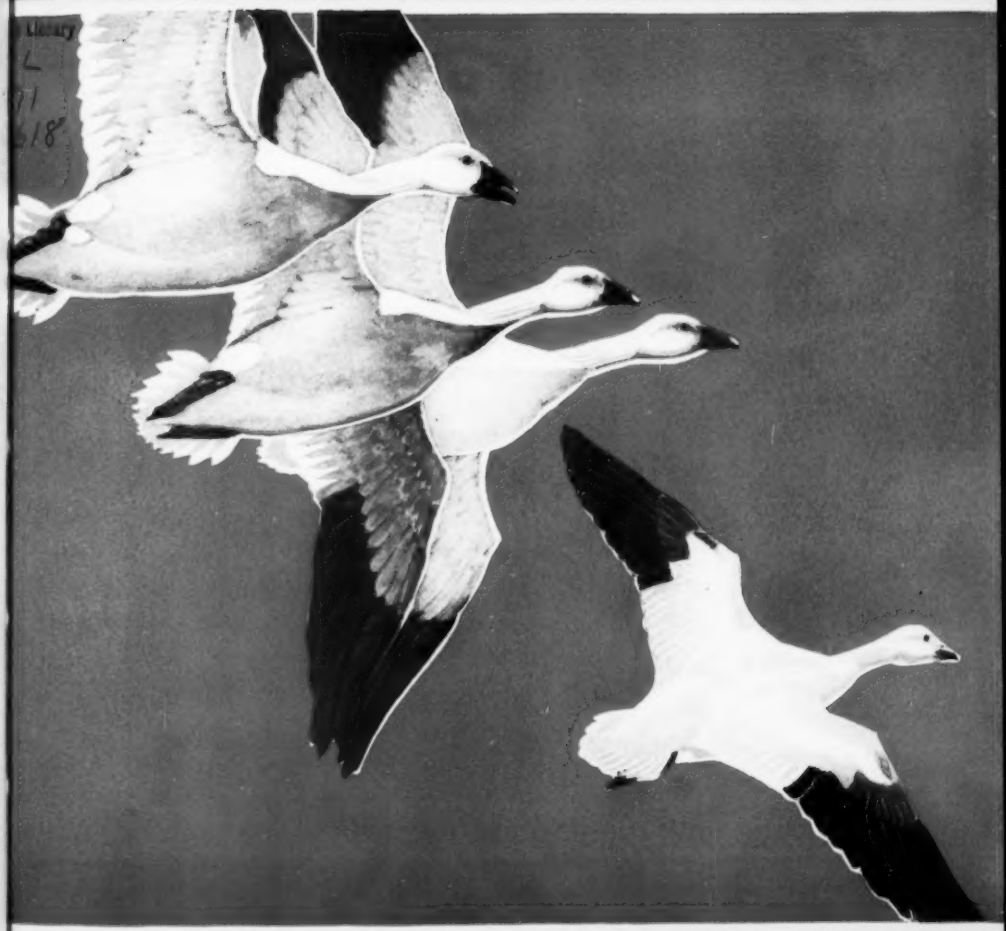
BIRD LORE



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BIRD-LORE

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THE PRESIDENT'S PAGE

Conservation marches on!

Recent convictions of prominent individuals for violation of the water-fowl hunting regulations give encouraging evidence of the growing effectiveness of enforcement. They prove also the increased support by public opinion of reasonable regulation of shooting.

There are still some persons in the country who consider it a sign of 'rugged individualism' to shoot more birds than the Government regulations permit, and to take them by methods which those regulations forbid. But there can be no doubt that the great majority of Duck hunters are adhering to the regulations; these men are coming to recognize the unanswerable fact that the regulations *have worked*. And they know all too well that without regulation the very existence of water-fowl was imperiled.

In the great battle to preserve for coming generations the magnificent array of plume birds, a determined minority bitterly opposed the forces of conservation. But they were defeated, and public opinion has acclaimed the victory. This Society is proud to have been in the forefront of that battle.

In the difficult fight that is being waged today to preserve our equally splendid heritage of water-fowl, the majority of hunters are for conservation and not against it. We welcome the growing support of those who love wild-fowl shooting, yet stand with us against carnage and annihilation.

Conservation is the order of the day. Those who oppose it are running against the tide of Governmental policy, backed by a determined public opinion.

Kermit Roosevelt

Owen M. Smith, from Nesmith

"Northern deer spend the winter in swamps"

BIRD-LORE

NOVEMBER-DECEMBER, 1936

Predation Is Not What It Seems

By Leonard Wing

With Photographs by the Author

MANY a gospel truth implicitly believed in, and passed on from hunter to hunter, has broken down and evaporated under the glare of scientific scrutiny. One of these—the belief that predators and predation exterminate game—floats off like steam from a spaniel before the heat of modern wild-life research.

Predation, though easy to observe, is more difficult truly to understand. It is at once as real and as unreal as any phenomenon that stirs the imagination of a dramatist. Even to the hunter it is thrilling, but he sees only the apparent threat to game animals, and misses, unless he has come under the influence of a trained biologist, the deeply underlying complications that only the expert can fathom and interpret.

The terminology of *conservation-biology* is as mysterious to the uninitiated as the words used by a French chef. As the recipe is given in such terms as 'carrying-capacity,' 'vulnerability,' 'night-flush,' 'interpredation,' 'escape-cover,' 'sub-marginal,' and a host of similarly recondite expressions, is it anything to wonder at that hunters are not able to understand how the wild-life dish is blended?

Predation problems spring up with astonishing regularity and command great attention. At sportsmen's meetings and dinners the talk always swings round to predation at some time during the evening. Yet the big problems of hunting, the management of land according to proved findings, the handling of hunting according to the amount of 'crop,' go barely touched. It is the old story of straining at the gnat.

The first bit of research in this country designed to shake some of the hayseeds out of predation was the work of Dr. Paul Errington. This work resulted in the landmark now called 'Errington's Law of Vulnerability.' His findings dealt specifically with the Bob-white, but appear to be so basic as to apply over a wide wild-life field. The indications are that this is more than a Bob-white law. It appears to be a predation law. In the case of Bob-white it was found that, contrary to popular belief, excessive losses due

"The owner fenced off his shooting grounds"

to predation are not an illness in themselves. They are symptoms telling the game manager that the environment is weak. The manager must doctor the environment to build up its strength if he would raise more Quail.

What is a strong environment? A strong environment is one that has food, cover, nesting sites, winter range, and an innumerable host of other factors all in sufficient quantity and quality to maintain a large number of birds. It is not a case of having enough of any one factor. They must all be present. If a Quail range has enough area and nesting places for a hundred birds but wintering ground for only ten, it will have but ten. It is like a railroad that has large stations holding two or three hundred people, but carspace to hold only fifty. The trains have a carrying-capacity of but fifty people, and the capaciousness of the railroad stations cannot make them carry more. Likewise in wild life the carrying-capacity is just such a figure—the number that a range can support in security.

Game conservation in the past has been an attempt to string out the limited game supply just as the gatekeeper at the railway station holds back the crowd and tries to string out the seats as far as they will go. It usually occurs to the railroad officials to put on more cars or to raise the price in order to reduce the pressure.

One winter I ran into an interesting case where unintentional mishandling of the game range brought up a serious problem in predation on deer. Of course, the problem was highly artificialized, but the contending factors arranged themselves as though fully wild and normal.

Deer in the North spend the winter in swamps, moving out of the higher lands as deep winter approaches, and yarding in heavy swamps where cedar browse furnishes a staple winter food. Thus the important link in the chain is the winter yard, so to speak. The total population that the surrounding area can carry is determined by the number that can pull through the winter. In the deer country, the Commissioners, over-riding their own executives, permitted a hunter to establish a deer farm, that is, a shooting-ground. The area selected was just such a deer yard as I have mentioned. The owner fenced off his shooting-grounds in August when the deer were still in the highlands. According to their an-

cient custom, the deer moved in, but this winter they met with an obstruction. A fence stood in the way, mill around as they would to find a passage into the swamp that had always hitherto been theirs. Woven wire is a perfect barrier. I doubt if there is one person at all familiar with the woods who by this time has not seen exactly what to expect of these deer. And it happened—starvation.

We hear intelligent, kind-hearted people align themselves with the hunters against predators for the voracious way they attack their prey. It seems more cruel for a little bird to be seized in mighty talons and torn to shreds than to be shot. Yet there is a still more cruel fate from which many a predator has saved his prey—starvation, one of the most pitiful sights in the woods. To see a doe down from lack of food, her gaunt sides telling a terrible story, and her glassy eyes gazing up in a mechanical stare, is a pathetic picture that leaves a chill on its beholder.

Yet the deer thrown up against the fence were in such straits. Their summer range could not carry them over winter. Can a Phoebe live in the North all winter?

Wolves have long held the enmity of hunters. From times long past they have been held up as destroyers of the blackest and most wanton kind. They kill for no other reason than the joy of killing. Isn't this the same as our hunting? Ernest Thompson Seton has written ('Lives of Game Animals,' Doubleday, Doran & Co.):

When a man goes a-hunting to get food, we call him a pot-hunter, and despise him. When a man goes a-hunting for the pleasure of the chase, and piles up a long list of dead, announcing an incredible bag, we laud him as a sportsman.

When a Wolf goes hunting for his food, we hate him for a destroyer, even though he be starving. When he has sufficient food and kills for the love of sport, we have no language strong enough to condemn the destructive monster.

The author, standing by a tree whose lower branches have been stripped by deer

The wolves came upon this starving deer herd I have just spoken about. To them a man had furnished a well-stocked larder. The poor deer had tramped the trails into a splendidly compact set of runways. Deer, weak from starvation, can be harvested by wolves as easily as a man pulls a turnip in the garden. And that is the thing the wolves did here. They feasted at the table the fencers set.

Probably not ten per cent of the deer starving around the hills could

"... Torn deer remains ..."

be carried by the range indicated with any chance of coming through the winter in fair shape. Had man been managing such a herd as he would cattle, he would have removed all above the food supply. But nature has no way to remove an excess, whether it be from an increase in the birth rate or a decrease in food supply, except through predation, disease, and starvation. It seems cruel. But the wild creature lives a hard life, ever on the alert to keep from being the individual removed. The wolves that now entered the starving herd came, as it were, in response to Nature's need to take off the surplus.

As I looked over the torn deer remains, the humanitarian in me looked sorrowfully at the scene; but as I turned and gazed at the sight of starvation, the gnawed bark, the browsed pines, the biologist in me argued back, "If only the wolves could speed up their activities and remove ninety per cent of these animals! Perhaps then the remainder could pull through without undue hardships."

But it was not to be. Local residents discovered the deer falling prey to wolves. It is characteristic that whenever a hunter sees a Hawk get a Quail or hears of a wolf getting a deer, his whole thought is, "*The Predator Must Be Killed.*" And so a wolf hunt was organized, with the

result, I regret to report, that they killed three wolves. Let us hope for the sake of the deer that there were more, and that they got away.

What is more natural for a layman to believe than that the killing of deer by wolves is harmful? But strange as it seems on the surface, the predator was his prey's best friend. Not a friend at the moment to the deer he devoured, but certainly to the deer-herd in the long run. Predation is not what it seems. Had the well-meaning local residents recognized that deeper problems might be involved than appeared to them, a competent conservation biologist might have been called in to diagnose this case of predation. Cases differ. In this instance, he would perhaps have prescribed that a large number of the prey be killed off, rather than the predator. As a matter of fact, it was so recommended to the conservation officials because the fence could not be removed. Granting the permit had legally closed the deer's swamp from them.

Less spectacular instances crop up hundreds of times each year, and are solved via the shotgun route. Perhaps some day when a new generation of hunters and administrators grows up and assimilates the steady output of methods constantly being discovered, we shall have a practicing of the pious predator-control rules of the American Game Policy, so far unpracticed by the very ones who promulgated it.

The record, in the snow, of a Raven that came to feed on dead deer

We Can't Afford Pollution*

By **Kenneth A. Reid**
Izaak Walton League of America

POLLUTION of streams has been a gradual and insidious process, from an unappreciable beginning to a present crisis of first magnitude that is not merely a menace to public health, but strikes at the very foundation of our entire economic and social structure. Vilely polluted streams throughout the length and breadth of the nation furnish mute but convincing testimony that altruism and the practice of the Golden Rule constitute a beautiful theory without application in this country, where water is concerned, and that existing methods of control by state and local agencies have proved utterly inadequate.

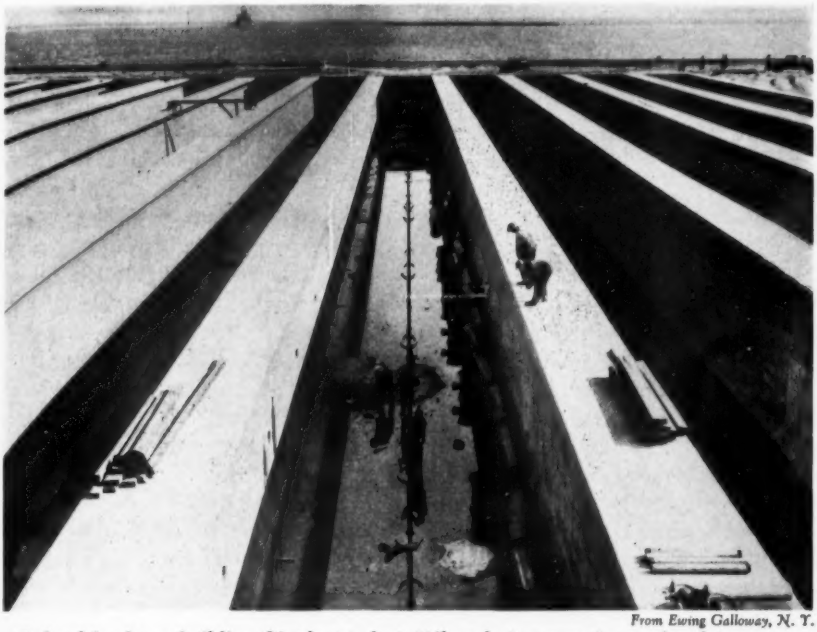
Pollution was no problem in Colonial times; what little existed was quickly assimilated by the large volume of pure water in the streams and rivers. When one or two small industries turned their wastes into a river there may have been no appreciable ill effects, but when fifty or a hundred larger ones added their pollution to this same stream, Nature's ability to assimilate and neutralize this greatly increased load was severely overtaxed, and the river became a vile, dead thing—a liability and a scourge to the people living in the watershed, instead of "a living thing of beauty and a boon to all humanity."

Under our present social and economic system—which where water is concerned amounts to no system at all—water pollution is in direct ratio to the increase of population. Where we still find unpolluted streams, almost invariably we find a comparative scarcity of the genus *homo* in the watershed, rather than any orderly plan of his for keeping them so. It is a sad commentary on our vaunted civilization that water pollution seems to be an integral part of it. If the predicted further increase in population is to be reckoned with, the problem will become increasingly acute with the years until it becomes literally necessary for the American race to conquer pollution or be conquered and wiped out by pollution.

Pollution and its continual increase are a result of Man's utterly selfish and short-sighted business economy, which in the final analysis is an entirely false economy. Streams have been used by both municipalities and industry as an easy and convenient means for getting rid of wastes without any thought for destroyed biological values or for the dire effects of this pollution on downstream communities. In this process of "passing the buck," the Golden Rule has long been buried under the bosom of polluted waters.

Only the most sparsely settled sections of the country are relatively free from pollution, while the great industrial state of Pennsylvania en-

*Read at the 32d Annual Convention, National Association of Audubon Societies.



From Ewing Galloway, N. Y.

Federal funds are building this plant to keep Milwaukee's sewage from going downstream

joys the odious distinction of having the highest percentage of polluted waters—approximately 80 per cent of the stream mileage of the state being polluted, and a great part of this mileage so thoroughly polluted that no aquatic life can survive.

It would be difficult to estimate accurately in dollars and cents the tremendous loss of aquatic resources that the nation has suffered as a result of pollution. Some criterion is furnished by the present annual take of salmon from the Columbia River by commercial fishermen, amounting to more than $10,000,000. Consider also the tremendous runs of shad, herring, and other anadromous fish that have now largely become history, the hundreds of thousands of acres of oyster and other shell-fish beds ruined, the many thousands of miles of inland streams devoid of their valuable fish resources, and the serious reduction in water-fowl through the agencies of pollution, and we have a staggering total. Certainly it would run well over a hundred million dollars annually in commercial and food values alone—and this does not take into consideration the tremendous esthetic and recreational values of the water themselves.

In addition to the biological losses, severe pollution of streams has robbed many farmers of their only source of supply for stock-watering and other uses, while instances of major declines in property values are so numerous and wide-

spread as to constitute a generally accepted corollary to pollution. In no phase of our social behavior has there been such flagrant violation of the property rights of others as in the visitations of pollution on downstream communities and landowners.

In the municipal and industrial water-supply field, the annual expense resulting from polluted waters is tremendous. As far back as 1915 the report of the Army Engineer's office for the Pittsburgh District showed an annual loss resulting from acid pollution alone of $11,202,956, covering repairs and replacements to plumbing, boilers, engines, boats, locks and dams, and for water-treatment costs. Today the condition of the rivers is very much worse and the cost correspondingly greater. Even after elaborate and expensive treatment, the final product that comes through the faucet to the residents of cities like Pittsburgh and Philadelphia, while it may be bacteriologically safe fluid, is generally offensive to the taste and nostrils, and cannot by the wildest stretch of the imagination be classed as pure water. Just what effect continued use of this conglomerate mess of chemicals and disinfected wastes may have on the human system is rather imperfectly known, but it is a definitely established fact that its repugnant taste and odor causes the average person to consume a smaller quantity of it than one would of pure water. This is no reflection on the water companies serving these and other cities—in fact, it is a wonderful tribute to their ingenuity that they are able to convert the dark and sinister fluid from the rivers into a relatively clear product that the citizens can drink, living to tell the tale.

Fortunately, all cities do not have such badly polluted sources of supply, but, unfortunately, few escape payment of the financial penalty resulting from pollution. Rare indeed is the situation of a city with a pure and adequate source of water at its doorstep. Usually such a supply is secured only at the great expense of laying many miles of pipe-line to a distant source that man has not yet defiled. In either case the citizens have to pay the bill that was passed on to them by polluters above.

The prohibitive cost of necessary treatment works is the common excuse of both municipalities and industry for not installing them. The real reason is that there is no incentive voluntarily to dig down into their own pockets for the construction of treatment works because the benefits would accrue, not to themselves, but to others below in the same watershed, to whom the stream now carries their pollution by the law of gravity. The same industries and municipalities that plead poverty can usually raise equal or larger amounts for other purposes that accrue to their direct benefit.

The whole idea that adequate pollution control would be tremendously expensive is entirely erroneous when viewed from a broad public angle. It would mean a different distribution of costs, to be sure, but no increase. The public is already paying the bill with interest

but the only thing it is getting for its money is bacteriologically safe fluid from the faucet, while the streams continue to be polluted. The present practice of one town or industry dumping its raw wastes into a stream, in order to effect an immediate saving of a few dollars to themselves, thereby necessitating an equal and often greater expense on the part of the next one below for elaborate treatment of the polluted water before it can be used, is an unsound, indecent, and uneconomical one. If the process were reversed and the same amount of money were devoted to the treatment of these wastes at the source before they are dumped into the rivers, the pressing pollution problem would be solved, and the public would have thousands of miles of pure streams with their great aquatic, esthetic, and recreational values as a clear dividend.

The estimated treatment costs for most industrial wastes are frequently grossly exaggerated. Very often these wastes that constitute noxious pollution when dumped into a stream are valuable and will pay a profit on their recovery by the industry at the source. Wastes from distilleries, copper and brass manufacturing plants, and even coal washeries and pulp and paper mills, furnish concrete, even though isolated, examples of this truth. The capital investment for the treatment plant is often considerable, however, and even though the industry may know that the treatment plant will be a profitable investment, it is frequently loath to make this outlay.

While some industries have taken the initiative in working out satisfactory treatment methods, and almost invariably to their own ultimate advantage as well as that of the public, the general attitude is one of *laissez faire*. Many take the attitude that there is 'no known practicable method' for the treatment of their wastes and challenge the public or the water-control agency to refute this stand by showing them how to treat their own wastes. No public agency, regardless of how learned, is in as favorable position for working out and designing a satisfactory treatment plant for the wastes of an industry as the engineering staff of the industry itself, which through years of research and development has worked out the system that put the objectionable wastes in its effluent. If one-tenth of the capital investment, the brains, engineering research, study and planning had been put into the treatment of the effluent that has gone into the development of the complicated manufacturing practices that produced that effluent, the pollution problem for most, if not all, industries, would long ago have been solved. It is an insult to American inventive genius and to American engineers to say: "It can't be done." The truth is that the incentive for doing it has seldom been there, but the time is rapidly approaching when industry must consider satisfactory treatment of its polluting effluent as a proper and legitimate part of the cost—or profit—in the manufacture of its product.

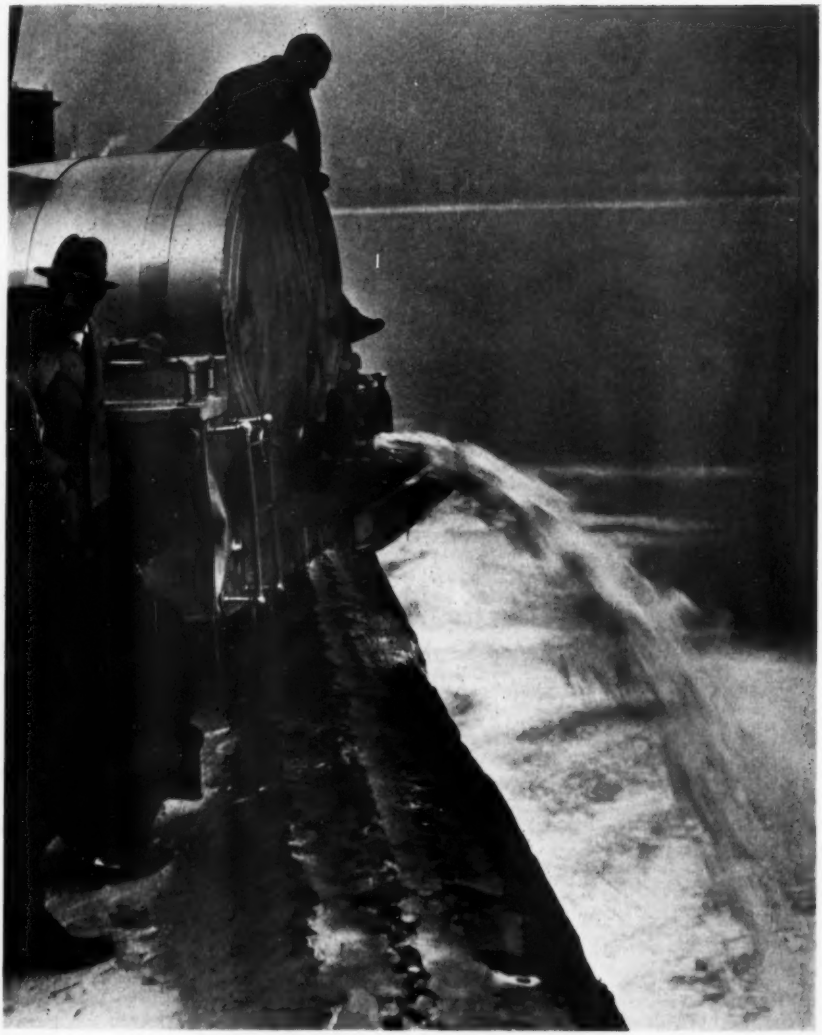
What will be the cost for cleaning

up the nation's pollution? Wild statements have been thrown around by 'apologists for pollution' to the effect that municipal sewage treatment installations would total more than a billion dollars, while those for industry would total four to six billion. There is no substantiation for such wild figures. There are already sufficiently accurate data available for estimating the total cost of needed municipal sewage treatment plants, together with intercepting sewers, and this total figure for the United States as submitted by E. E. Butterfield, a municipal sewage expert, at the recent Senate hearings on pure-streams bills, was $425,000,000. There is no basis for any present estimate of the total cost for industrial waste treatment plants, although the same authority indicated that the four billion figure was inflated at least as badly as the one billion estimate for municipal sewage. Whatever the cost, any fair estimate would place it below the bill the American public is paying today for having polluted waters.

When we consider the direct expense imposed on the public by reason of pollution of its waters, necessitating greatly increased costs of treatment for municipal and industrial water supply—or equally costly transportation from distant unpolluted sources—the more frequent and costly replacements of boilers, plumbing and fixtures by reason of its corrosiveness, the increased amount of soap required by reason of its artificial hardness, and the lessened life of the garments we wash in it, to say nothing of the wear and tear on the human body incident to this internal consumption of a highly chemicalized fluid in which fish cannot live, the actual annual expense will run into the hundreds of millions—and not one cent of this goes toward correction of the source of the expense. Add to this the definite annual loss of food and commercial revenue from the disappearance of fish and aquatic life, the more intangible, but perhaps greater losses from the recreational and esthetic standpoints, and a proper figure to represent the annual interest on property devaluations along polluted waters, and it seems reasonable that the total might exceed a billion dollars annually. In order to play safe and avoid any possible criticism of exaggerated figures, let us divide this amount by four and call the annual loss $250,000,000.

But this $250,000,000 does not represent the capital loss from pollution, but only the interest on this capital as expressed by the annual loss or expense. It is a continuing annual expense that will go on indefinitely, and even increase with the years until we correct the source of the trouble. Taking an interest rate of 4 per cent, the capital loss represented by this $250,000,000 annual loss would be $6,250,000,000—more than even the most wildly exaggerated estimates of the cost of treatment works by those who claim that pollution correction costs are prohibitive!

There never has been a more opportune time for a wise and farseeing Government to correct a nuisance that is truly public than



From Ewing Galloway, N. Y.

Condemned milk goes into the 'open sewer' that surrounds Manhattan Island

during the past few years when billions of dollars of public funds have been used on emergency works projects to relieve unemployment. Prominent Administration officials were entreated by leading conservation organizations and individuals to give pollution control a prominent place in the program—a position that it truly merited by reason of its broad public, social and economic aspects—but with the single exception of the very commendable project of sealing abandoned coal-mines to reduce the acidity of the effluent, little was accomplished. Had the Administration seen fit to adopt the earnest suggestion that, "unless and until a municipality with sewerage facilities either had an adequate sewage treatment plant or bona-fide plans for the installation of one, it would not be eligible for Federal funds for any other purpose," the present question of municipal sewage pollution would be well on the way toward permanent and satisfactory solution.

What is the answer to the pressing pollution problem that to date has defied successfully all efforts toward its solution? The answer lies in an honest analysis of human nature and a program that recognizes the shortcomings revealed by this analysis. Human nature may be altruistic in certain abstract matters, but it certainly is not so when it comes to the corporate altruism required for a municipality to borrow money to build an expensive sewage treatment plant that will directly benefit a rival town down the river; or for an industry to spend its money in purifying its effluent so that the water treatment costs of a hated competitor below may be reduced. Until we face these facts squarely and quit dreaming about an altruism that does not exist, and the individual voluntary action of polluters that will never take place, we will continue to have an unsolved and active pollution problem.

Barring the very limited and ineffective jurisdiction of the War Department, the Public Health Service, and the Bureau of Fisheries, what little pollution control we have had has been by local or state agencies. The utter lack of uniformity in these various independent state agencies has militated against any real accomplishment, even in the rare cases where state laws gave the power necessary for real accomplishment. In most cases state laws are woefully inadequate, and there is little prospect that they will be materially improved, or effective, even if they are strengthened, because it is only human nature for one state to be loath to put its citizens and industries to the expense of treatment works when their competitors in adjoining states are not required to do the same thing. Each waits for the other to act first and, as a result, nobody acts. The same illustration applies to the ineffectual bickering between municipalities and industry within a state as to who should clean up first.

Any pollution abatement program to be successful must include the principles of uniformity and fairness, and must confer mandatory powers on the directing agency. It

is idle to contend, as so many of the apologists for pollution do, that existing agencies and present laws are entirely adequate, because present conditions are the result of existing authority—or lack of it. The disgracefully polluted condition of our streams throughout the land stands as mute evidence to the utter breakdown and failure of the present alleged system for their protection.

Streams flow by gravity from county to county and from state to state with utter disregard for man-made political boundaries. It is not possible to confine them and the pollution load they carry within such boundaries if gravity decrees that they go elsewhere, and it logically follows that they cannot be successfully controlled except on a watershed basis which frequently involves several different states. Barring a few short coastal rivers, the great majority of pollution eventually assumes an interstate character, and even the intrastate rivers on the coast take on a Federal aspect when they enter the sea.

Realizing these basic facts and the absolute necessity for some uniform and coördinated program, forty-odd conservationists who were vitally interested in pure streams met in conference with the late Secretary of War and Senator Lonergan of Connecticut to formulate a program for the nation-wide purification of streams. This conference, held in December, 1934, and known as the 'Dern-Lonergan Conference,' outlined a program for Federal control of pollution on a watershed basis, which after much further study and research formed the basis for the two bills, S3958 and S3959, introduced in the last session by Senator Lonergan, and reported favorably by the Senate Commerce Committee shortly before the close of the session. Senator Lonergan plans to reintroduce essentially the same bill at the beginning of the next session when there will be ample time for it to be acted upon—favorably, I hope.

There has been so much publicity on the Lonergan Bill and the various subterfuge bills that followed it in the national Congress that I shall only comment briefly on the essential points of difference to clear up some of the confusion that exists. Practically all of them provide for coöperation with state agencies, for interstate compacts, for studies and surveys and dissemination of information, for Federal loans and grants for treatment works, and other similar provisions, but Senator Lonergan's Bill is the only one that clearly recognizes the futility of existing systems and provides the mandatory powers so essential to force into action the recalcitrant minority that has successfully held up pollution abatement programs these many years. It is also the only bill that provides protection against the spread of the disease from new or potential sources.

The Barkley Bill, S4627, and its companion bill in the House by Mr. Vinson, are typical brain children of the bureaucracy so rampant in Washington and in many state capitals, that puts bureau welfare and glorification ahead of public welfare and accomplishment. When their verbiage is all boiled down,

they amount in substance to memorials to the U. S. Public Health Service and the health departments of the individual states—the very agencies that have made such a miserable failure of pollution control in the past! Specifically, they provide for an appropriation of $1,000,000 annually to the U. S. Public Health Service, $300,000 of this amount for the administration of the Division of Stream Pollution Control in the Bureau, and the balance of $700,000 to be paid to state health departments for "investigations, surveys, and studies"—and for nothing else!

Senator Lonergan's Bill had the solid support of conservation organizations throughout the country, including such national organizations as the Izaak Walton League, Audubon Society, American Fisheries Society, and North American Wildlife Conference. It was opposed by practically all the polluting industries, individually and through their associations, and either openly or secretly by most state health departments and the U. S. Public Health Service. It is significant, however, that not a single municipality opposed the bill. The Barkley and Vinson bills were opposed by the conservation organizations that have long fought for pure streams, but were supported by the very polluters who vigorously opposed the Lonergan Bill, and were also supported by most state health departments and by the U. S. Public Health Service.

Why did the polluters support the Barkley and Vinson bills? Because they realized that there was absolutely no mandate in either bill that would interfere with their doing exactly as they pleased about their pollution as they had always done in the past, and, furthermore, that the passage of such an innocuous bill would lull the uninformed public into a peaceful sleep of false security, thereby delaying another five or ten years the positive control of pollution that eventually must come. The attitude of the health departments will be clear to those who are familiar with the workings of the bureaucratic mind, and the particular fondness of health bureaus for "studying and investigating" the pollution problem for its own sake.

If there is any subject under the sun that has been investigated to death without taking action on the results of these investigations, it is water pollution. Let us have no more stalling under the guise of further investigation and research until we have made some use of the tremendous investment already made in this field. The issue is clear. When the bills are reintroduced in the next session of Congress, see that you support the one that provides for action by conferring mandatory powers on the directing agency—and be sure that you are not misled by soft words and assurances from the Investigating Fraternity of Sanitary Engineers and Health Officials.

'Getting Personal' with Birds

By Edmund J. Sawyer

With Illustrations by the Author

TO ESTABLISH a winter feeding station for small birds has, in recent years, become little more than a routine part of the ordinary bird-lover's procedure. It is no part of the present story to go into pro and con details on this subject in itself. However, the accompanying illustration will show in an incidental way the few salient features any winter feeding station need have—that is, given the proper kind of food and some provision by which the food may be replenished and made accessible in spite of snow, sleet, and wind.

Presumably, rather few persons who attempt to feed birds regularly in winter have any thought beyond the desire to help the birds and to be able to enjoy their much nearer and more frequent and regular presence than could otherwise be done. And certainly such motives are quite sufficient to justify the small labor and the nominal expense entailed. But it so happened in my own case that there was a distinct purpose, amounting to an all-sufficient urge in itself. It occurred to me that, by practically continuous observation at arm's length of the feeding technique of these birds, it should be possible to discover some details of their methods that even long-continued study might fail to reveal under the usual conditions in the field. In other words, it was as though, after long and fairly familiar acquaintance with these friends—such as one gets from patronizing the same restaurant, with others—I now proposed to invite them to share the comparative privacy of my own booth and table, and this

Dinnertime at the food station

for the definite purpose of noting exactly how they managed their knives and forks. And if, for instance, they should inadvertently drop any choice morsel on the tablecloth or the floor, I confess I deliberately and shamelessly plotted on being so utterly rude as to watch their reactions with a ruthless eye.

My first station was close beside the window of the first cabin I built. This was in the woods of northern New York. That experience has left me at least two indelible recollections: One, of being summoned from bed punctually at a certain early hour each morning by an insistent tap-tap-tap on my heavily frosted window. The companion recollection concerned the same caller, a Black-capped Chickadee, and his skill in dodging the blows of my hammer while he perched on my left hand and ate from the chunk of suet I was nailing up for the day!

Some years later, finding myself snowbound in Yellowstone National Park, I established a food station on the window-sill of my office at Mammoth Hot Springs. Here my daily guests included a number of Clark's Nutcrackers or Clark's Crows. In watching them pry off pieces of frozen suet, I discovered how, possibly, they and perhaps certain other birds loosen pine-cones and other morsels of their natural food. Repeatedly, one of the birds was seen to jab his closed bill into the mass, then loosen a lump by *forcing his mandibles apart*. Then, too, these birds could be seen to carry away and bury food in the snow when the latter was very deep.

Some four years ago I built a log-cabin studio in a particularly wild section of the Rockies near the Montana-Idaho state lines. Here, at an elevation of 8000 feet, I spent two winters with my bird-guests. The regular daily boarders were Rocky Mountain Hairy Woodpeckers, Clark's Nutcrackers, Rocky Mountain Jays, Slender-billed Nuthatches (like our eastern White-breasted) and Mountain Chickadees; while Magpies were nearly as regular callers, with occasional Red-breasted Nuthatches and Long-tailed Chickadees.

Of these birds, the Hairy Woodpeckers showed the most ingenuity, the greatest degree of individuality, and decidedly the most pronounced sense of ownership of the food station. There was more or less contention among the other birds, generally speaking, but it was quite evident that only the Woodpeckers considered every other bird an intruder on their property, and a most unwelcome one. Moreover, the first Hairy never got beyond a fighting acquaintance with either of the two others of his own species which later found, and frequented, the station.

These Hairy Woodpeckers had a way of their own of retrieving small pieces of food accidentally dropped. They would quickly hug the bark and at the same time expand their breast-feathers to form a bib which caught the falling crumbs, then they deftly and leisurely pecked these crumbs off their bosoms by pointing their bills straight down in front. This was such a regular part of their routine that I have no doubt it is

an established habit. Its importance can readily be understood when we reflect on the long and laborious process often required to excavate a grub from a tree.

The food consisted of suet that had been poured, while in a melted condition, into small auger-holes 2 inches deep, in a section of tree-trunk. This tree section was then laid outdoors a few minutes for the suet to harden, after which it was placed on its stump where cleats held it in position. By this method natural conditions were somewhat simulated; also, the birds were kept busy for from many minutes to half an hour on each visit. Gradually the Woodpeckers enlarged all the holes in their efforts to get all the food in each. In doing this excavating, their skill and technique as expert wood-workers was truly astonishing. This way and that the bird would turn the chisel-edge of his bill, and one could see the telling effect of each blow as a chip, perhaps the size of one's finger, would gradually be loosened, then flicked aside by a toss of the head. A blow could be struck equally well and with equal force from almost any angle—upward, downward, or to either side. Yet, often the busy worker, with scarcely the loss of a stroke, would shift his entire position and plan his attack from a new quarter. To watch the hole steadily and rapidly widen and deepen was to partake of the same thrill one feels in first watching an expert with the broad-axe. But I have seen no human broad-axe 'artist' who could rain blow on telling blow with anything like the lightning rapidity of this Woodpecker's work. It was the poetry of excavation.

"Often two or three of them would return at the same time"

An incident that illustrates the Woodpecker's sense of ownership occurred when a certain Mountain Chickadee intruded on one particular Hairy. I had put some suet on the inside of a hollow stump which was provided with an entrance large enough to admit the Woodpeckers. Hairy No. 1 promptly claimed exclusive ownership of the interior of this larder. Going inside, he would hold possession for an hour at a time, sometimes not even his bill showing at the entrance. On one such occasion an ill-advised Chickadee blundered straight into the hole. Immediately a spear-like thrust forced him out again, but at the same time he was held securely by his breast-feathers in the Woodpecker's bill. He fluttered and struggled in vain until, as I was finally on the point of interfering, he broke away, but only by leaving in the offending bill a large tuft of his breast-feathers. I always knew that particular Chickadee thereafter

"A blow can be struck equally well from almost any angle"

by a conspicuous gray and nearly bare spot on his otherwise white breast and, as I thought, by a somewhat added impertinence in his forays on this same larder during the brief absences of its self-appointed guardian!

The big, fluffy Rocky Mountain Jays were always a pleasure, and none of the guests was more prompt in coming or more slow to leave. All the birds liked pancake batter, and for this food I had a small shelf just outside the door and in front of my one small front window. Repeatedly I tried to dart into the cabin so quickly after placing the food as to see the first arriving Jay; but I do not know that I ever succeeded. They knew well when to be within call, and they fully understood what it meant when that pan was scraped with a knife in the frosty morning! While the soft dough was still steaming hot they were busy gulping it down. It took but a few seconds for a Jay to fill his crop, grab up a last billful of dough, and fly off. In ten seconds he had hidden that load and was back for more, four or five of his fellows alternating with him, and equally industrious. Often two or three of them would return at the same time, but one always made room for another.

Further to simulate natural feeding conditions, suet was sometimes poured or rubbed into the crevices of the bark on the feeding-stump. In watching just how the Nuthatches got at this food with the utmost ease, I could better understand that 'undershot' appearance of the bill which is a distinct peculiarity of these birds. The bill being joined to the head at such an angle, the bird can thrust straight upward, for the chin and throat outlines are practically continuous with the straight lines of the bill. Previously it had not been quite clear to me that the Nuthatches had any distinct advantage over the Woodpeckers, but their particular niche in the group of tree-trunk feeders now became apparent. The Woodpecker drills and excavates straight into the wood; along comes the little Brown Creeper who scans the bark and probes to right and left in the tiniest cracks where larvæ or insects' eggs can be hidden. However, owing to his rather long and curved bill, it is difficult for him to see and to secure food hidden under the lower edge of scales of bark directly 'before his nose.' It is this food that the Nuthatch, in his turn, is especially adapted to secure with ease.

There is, perhaps, less real individuality in the feeding technique of birds than in any other of their activities or characteristics, and this for a reason, perhaps, too obvious to need pointing out. It would seem that no single factor in a bird's life can be of greater survival importance than food. Undoubtedly the individual bird acquires skill with practice, so that a bird on its first quest for food is not as expert, either in finding or in securing it, as he will become. However, we may be very sure that every fully mature bird we see—though he may be but one black speck among ten thousand other black specks which go to make up a flock of Ducks or Crows

—is an expert in the pursuit, the finding, and the securing of his own proper food; not only an expert but an expert that has achieved practical perfection within the limits of physical possibility.

Whether it is true or not that in all the forests of the world 'no two leaves are quite alike,' my own long-continued observations of birds, at intimately close range, lead me to believe it might be humanly possible to know any individual bird from all others of its kind by one or more things in its appearance, its voice or manners.

My brothers and I had, when I was a small boy, a flock of over fifty common Pigeons. It seemed such a natural thing to call each one by some appropriate nickname that I still recall how strange it seemed to us when any human visitor at our house thought it something to remark about when we nonchalantly called each Pigeon by name. Yet many of these Pigeons were the closest blood relations and appeared to strangers quite as much alike as the proverbial peas in a pod.

Certainly the birds at one's feeding station soon outgrow their specific names and instead of this or that species of Woodpecker or Chickadee or Finch or Jay, become 'Jerry,' 'Phil,' 'Mary,' and so forth. One inevitably comes to feel that birds are people.

ADVISORY BOARD ELECTED

At the annual business meeting of the Audubon Association, held at the American Museum, New York, October 27, 1936, the following were elected to the Advisory Board after their names had been proposed by the Nominating Committee: Alabama, Rev. H. E. Wheeler; Alaska, Otto William Geist; Arizona, Dr. Charles T. Vorhies; Arkansas, Prof. William J. Baerg; California, Dr. Joseph Grinnell; Colorado, J. B. Rishel; Connecticut, Aretas A. Saunders; District of Columbia, Dr. William M. Mann; Delaware, Dr. Julian W. Hill; Florida, R. J. Longstreet; Georgia, Nelson Spratt, Jr.; Illinois, Prof. Victor E. Shelford; Indiana, Dr. Earle Brooks; Iowa, Walter M. Rosene; Kansas, H. H. Lane; Kentucky, Dr. Gordon Wilson; Louisiana, Stanley C. Arthur; Maine, Dr. Alfred O. Gross; Maryland, Dr. R. V. Truitt; Massachusetts, Ludlow Griscom; Michigan, Dr. Miles D. Pirnie; Minnesota, Dr. Thomas S. Roberts; Mississippi, Miss Fannye A. Cook; Missouri, Dr. R. J. Terry; Nebraska, Prof. Myron H. Swenk; Nevada, George Springmeyer; New Hampshire, Francis B. White; New Jersey, Charles A. Urner.

Also elected were: New Mexico, Ernest Thompson Seton; New York, Dr. Arthur A. Allen; North Carolina, Earle R. Greene; North Dakota, Russell Reid; Ohio, Edward S. Thomas; Oklahoma, D. W. Ohern; Oregon, William L. Finley; Pennsylvania, Norman J. McDonald; Rhode Island, Albert E. Lownes; South Carolina, Edward Milby Burton; South Dakota, Prof. Austin P. Larrabee; Tennessee, Albert F. Ganier; Texas, Joseph Heiser, Jr.; Utah, Dr. Vasco M. Tanner; Vermont, Prof. Henry F. Perkins; Virginia, Prof. Ruskin S. Freer; Washington, Ellsworth Lumley; West Virginia, A. B. Brooks; Wisconsin, Prof. Leon J. Cole; Wyoming, O. J. Murie.

Uno and Una Return*

By **Margaret Morse Nice**

Illustrated by R. T. Peterson

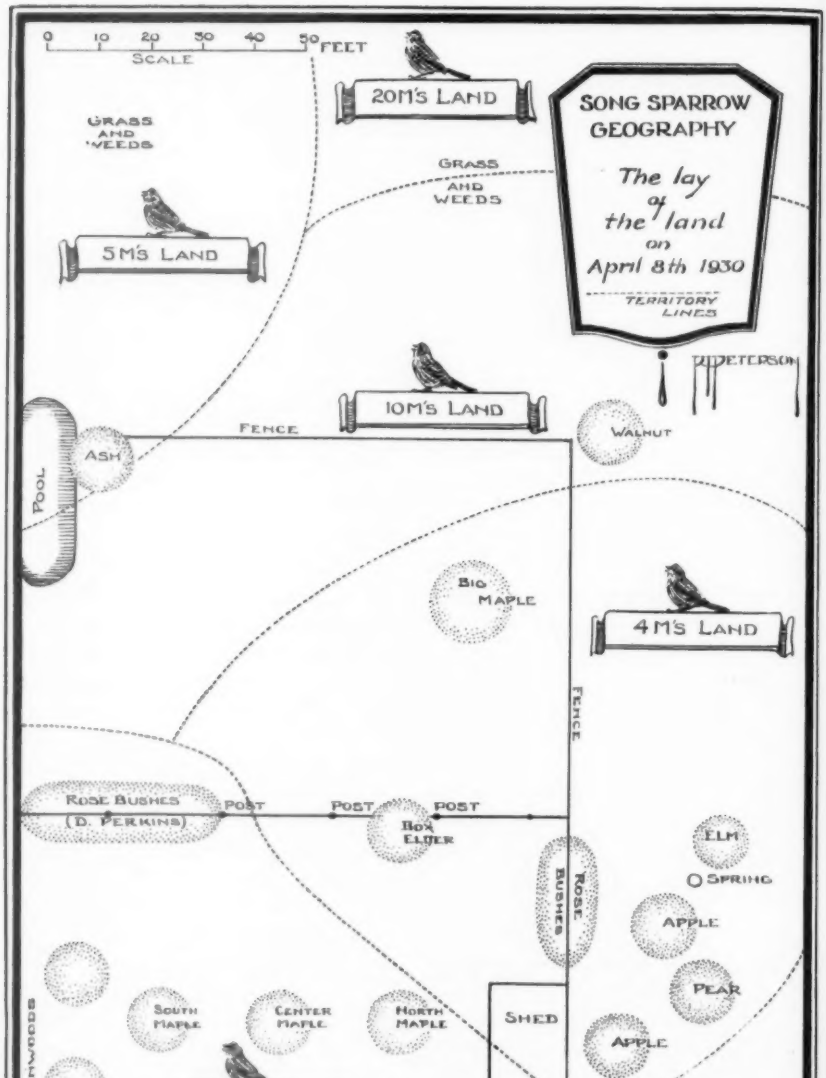
A BIRD decorated with colored bands possesses an individuality far above that of his fellows, for the observer can be sure whether he is following the fortunes of the same bird or a different one, and the confusion and uncertainty that until lately have accompanied so much field-work, vanish. My study of Song Sparrows would have been impossible without the use of the trap and the red, yellow, green, blue, and black celluloid markers.

With the Song Sparrow there is another characteristic that sets each male apart from the others, and that is his manner of singing. In contrast to almost all other North American birds each Song Sparrow sings songs that are different from those of every other Song Sparrow. During the long hours of association with the birds in the spring and summer of 1929 I had learned each of Uno's and 4M's songs by heart, so that I knew each one of them as well as I did the songs, for instance, of a Maryland Yellow-throat or a Warbling Vireo. I had known the year before that 4M possessed a variety of distinctive songs, and I had recorded four of them, but in regard to Uno I had noted, "He appears to have only two songs, neither especially distinctive." It was not an easy matter for me to distinguish and recognize each separate song. I began with the more striking ones, memorized their characteristic portions, and noted them down as they sounded to me, both in syllables and dots, dashes and curlicues, gradually building up the rest of the songs around the main themes. Each song was given a letter, and, once thoroughly mastered, was thus recorded in my note-books whenever heard.

This course of intensive ear-training showed me that Uno possessed six songs and 4M nine. Others of my Song Sparrows have had larger repertoires—twelve, fifteen, and perhaps more songs—but with only one other bird (187M in 1934) did I learn by heart every single song. Some songs were recorded for most of the males with which I came in contact, and many of these songs I recognized instantly, but to learn the whole repertoire is an achievement to be attained only by concentration on a few birds.

The definite knowledge of Uno's and 4M's song whenever heard was an important aid to me when listening to the birds from the sleeping-porch in the early morning hours and from my study during the day. It also proved an added source of happiness, for I became aware of character and loveliness to which I had formerly been oblivious. 4M's

*See BIRD-LORE, July–August, September–October, 1936, for the two preceding installments in this series. Another will appear in an early issue.


0 10 20 30 40 50 FEET
SCALE
20M's LAND
SONG SPARROW GEOGRAPHY
The lay of the land on April 8th 1930
TERRITORY LINES
GRASS AND WEEDS
GRASS AND WEEDS
5M's LAND
10M's LAND
PETERSON
FENCE
WALNUT
ASH
POOL
BIG MAPLE
4M's LAND
FENCE
ROSE BUSHES (D. PERKINS)
POST
POST
POST
BOX ELDER
ELM
SPRING
ROSE BUSHES
APPLE
PEAR
APPLE
SHED
SOUTH MAPLE
CENTER MAPLE
NORTH MAPLE
COTTONWOODS
UNO'S LAND
SOUTH CHERRY
NORTH CHERRY
BLUFF

song *A* had a determined, almost grim sound; with *C* he seemed in a desperate hurry; *G* was light and airy—a charming song; and *K* was the prettiest of all with the gayest little lilt at the end. Uno's *H* was spirited, his *C* had a triumphant ring, while *F* was high and clear, of exquisite, haunting beauty. Indeed, as far as variety of singing went, it was as if fifteen birds of different species had settled on our grounds.

When we returned to Columbus in the fall of 1929 we found Uno and 4M and 5M in our garden; quarreling was at a minimum as territories were no longer being defended. Uno left for the South on the night of October 14, and 5M was not seen after the 18th, but 4M lingered on through October and even through November. On December 2, cold weather had set in, accompanied by a four-inch snow; when I found him, his feathers all puffed out against the cold, eating weed seeds in company with Tree Sparrows, Juncos, and Cardinals, it seemed certain to me that he would stay through the winter. To find that some of our nesting Song Sparrows migrated south for the winter, and that some remained, was an unexpected and exciting discovery. It was a particular pleasure to look forward to having 4M's company all year long.

The second half of January was bleak and snowy, but with February came mild and sunny days that started all the resident Song Sparrows to singing. 4M made expeditions across the road to bother 7M, a young male just taking up his territory; 7M puffed out his feathers, waved his wings like little flags, and sang his best to beg 4M to let him keep his land. On the 13th, 4M settled down to proclaim his own territory, singing on his own land—and Uno's, too. He gave 178 songs in one hour and 211 in the next, giving each song for many minutes at a time before beginning another.

On the 22d his singing had almost ceased and I went out to investigate, armed, as always, with the bird-glasses.

A wonderful Song Sparrow chorus on every side. But 4M is sitting silent in his big maple. An unbanded Song Sparrow comes to the tree; he flies to a post, the new bird follows. He sits silent and looks down at her. She eats, then comes to join him. He flies to the rose hedge; she follows. He approaches; she says *zhu;* he leaves. She says *tsip*. He returns.

So a mate had arrived! And so very early! She was not Quarta, since she had no band. She was a dark bird, tame and voluble. I named her Quatre.

The next morning something happened that I recorded in gigantic letters in my field book:

UNO IS BACK!!!

There is always a happy thrill for the bird-bander when one of his birds, after a journey to the South or the North, returns. This thrill was heightened a hundredfold for me, since Uno was such a special bird; I had followed his fortunes for two years and during the last year had come to know him so well and to love him so dearly that I was jubilant to have him home once more. I rejoiced in every one of his

"Soon 4M gets a big twig"

familiar songs; never had they sounded sweeter.

4M, of course, was welcoming him in proper Melospizan style.

8.25. Uno singing *F* constantly. 4M singing *J* steadily. 4M chasing Uno around and about. Quatre adding her sixpence; she joins the chase with a chatter. . . .

8.45. A fourth bird appears. 4M and Quatre dash off in pursuit. Uno sits in triumph in his cottonwood, singing *C*. Preens himself, then sings *A*. . . .

8.50. Uno puffed, lifts one wing, sings *G*. 4M silent, but soon both sing. 4M chasing Uno; Quatre usually tagging after. Most of the flights revolve around the rose-hedge. . .

9.26. Birds return from a prolonged chase. Uno sings *F*, *F*. Fight, chase. . . .

9.41. Uno puffed, wing fluttering, is pursued by 4M and wife. Soon 4M stops and gets a big twig; he and Quatre are on the ground together. Uno comes down; 4M drops his twig. . . .

10.00. Uno to the feeding station, gets two bites. 4M comes; Uno leaves, sings *K*, *K*. 4M gets two bites. . . .

10.06. 4M and Quatre on ground feeding. She gets a twig and drops it.

This, to my surprise, was the end of their quarrels, Uno conquering his territory, *including the rose-hedge*, without even a regular territory establishment procedure. I witnessed but one small fight, but perhaps I missed a bigger one when the birds were out of my sight at one time for two minutes. Whenever 4M gave Uno a little respite, back the latter would fly over the rose-hedge. After all the grief of the previous season, he was going to settle that bone of contention from the start.

The energy displayed by Uno that

morning was amazing. After the journey of the night before, for two hours there had been continual fleeing from 4M and constant singing (270 songs in one hour) with only four momentary stops to snatch a bite of food. It did not seem in character for 4M to give up the contest so quickly. Was it that Uno was older and more confident, and 4M older and less overflowing with excess energy, or did the presence of Quatre have anything to do with it? Possibly he now preferred a life of quiet domesticity to incessant bickerings. He dominated Uno this year as last, but the situation along the border was more a state of armed neutrality than the open warfare of the previous season.

In the meanwhile I had been looking every day for 5M, the bird that owned the ash tree and pool just west of 4M's territory. Although he had been on the ground early in 1929 (I had banded him February 29), and had what I considered the best of any of the territories thereabouts because of the water on it, and although he sang faithfully, he was the last of the four males in the immediate neighborhood to get a mate, as Quarta had joined 4M March 13, and Una joined Uno March 15, while 6M, nesting across the road south of our house, had got his mate the earliest of all, March 11. It was not until March 21 that 5M could take a vacation from constant singing; his mate was an amusingly talkative, demonstrative little body. Unfortunately, in late April, after she had built her nest, something went wrong; one day I was shocked to see that she had lost her tail, and the next day she vanished. 5M mounted his ash and sang incessantly; for six weeks he sang before patience was rewarded by the coming of a second mate. Three babies were hatched in a nest at the base of the ash; all left the nest safely with bands upon their legs.

On February 25 I was delighted to find that 5M had come, but his territory was firmly in the possession of 8M, a young resident.

7.30. 8M chases 5M around and about continually, sometimes going for him viciously. Both sing. 5M chippers. He constantly returns to his former land, but 8M keeps the upper hand. . . .

8.07. A fight near the ash. 5M singing on the ground, following 8M, who only feeds. Neither is puffed. 5M goes into the ash, sings, then faces 8M and they hit each other. 5M chases another Song Sparrow from the ash, then returns to 8M. His tail is spread. 8M now singing. 5M drives him, then back to the ash and sings and sings. . . .

8.12. 5M singing, 8M threatening. 8M advancing, 5M retreating.

8.24. Both in ash, both singing and threatening each other. 8M flies to the east, but retires when Uno meets him all puffed out.

8.37. Now 5M pursuing 8M; both sing. *Now 5M has the upper hand*, following 8M, bumping into him.

8.42. 5M pursuing constantly. Now a flying chase—a fierce battle, rolling over and over.

8.57. 5M chasing 8M; they skirt the corner of 4M's land; 4M rushes in and joins the pursuit.

5M had recovered his ash, but he was not easily rid of 8M. Whenever I visited them throughout the day, there was endless chasing. 8M had yielded to 5M's claim, but was trying to squeeze in a territory between

Uno on the east, 4M on the north, and 5M on the west.

As the days passed, 8M was tolerated by his neighbors as long as he stayed in an absurdly small area, but whenever he tried to enlarge his boundaries on either side, he was met with determined resistance from 5M and Uno. These two sang morning, noon, and afternoon, while little was heard from 4M, who led a contented life with his devoted Quatre. On February 27, however, 4M was singing once more; something had killed his mate.

Two days later a new mate had arrived, also unbanded; she was a silent bird, light in color. In order to find an appropriate name for the newcomer I looked in the dictionary under the word Four, choosing what struck me as the most engaging synonym, namely Chatvar, from the Sanskrit.

On March 10 Uno stopped singing. To my disappointment his mate had no band. The dictionary was again consulted, this time under 'One'; I chose the Dutch word Een for Uno's wife. With both 4M and Uno already mated, what, I wondered, would Quarta and Una do, should they return?

The Ides of March proved full of import to 5M, for both happiness and trouble arrived on that day for him in the shape of a mate and a new neighbor, the irrepressible 10M. This bird had fixed his affections upon 8M's bit of land (8M having disappeared over night) and now embarked upon the ambitious project of acquiring and enlarging this territory for himself. The neighborhood was in an uproar; 5M, Uno, and 4M each took a hand in trying to make him see that there was no land to let in that region, but the more he was rebuffed, the more stubbornly he stuck to his enterprise. Uno had been singing some two songs an hour as befitted a newly married man, but he was so outraged by 10M's impudence that from 8.20 to 9.20 that morning he sang no less than 278 times!

As regards 5M's mate, I was excited to see that *she had a band upon her left leg*. Could she be Una without her colored band, or was she one of the young birds? (After this I made it an invariable rule to put the aluminum band on the right leg with all nestlings, and on the left leg with all older birds.) How should I capture her? Up to that time it had not occurred to me to take my trap afield with me, having used it only near the house and in the garden. But it was plain I would have to catch her on her own territory. So I took the only trap I owned at that time, a small, pull-string affair, and baited it under the ash, while with the end of the cord held hopefully in my hand I waited on the opposite bank. The lady, however, proved cautious, and six chilly hours on four different mornings passed with the capture of no one but 10M. But if tangible results of these mornings were few, many pages of note-book were filled with the doings of the birds and in particular a complete count of all the songs given by the four males in which I was most interested. The three mated birds sang as follows: Uno gave from zero to 26 songs an hour, 4M gave from three to 20,

"All puffed out against the cold ..."

and 5M from three to 21, but the bachelor, 10M, sang from 80 to 310 times an hour.

On March 21, 10M was eating in the trap as my all-important female approached.

10M hurries out. They threaten each other, both somewhat puffed. He starts to drive her to the west. Where is 5M? Why doesn't he come to protect her? 10M pushes her farther and farther west; she turns to face him, but he drives her again. Here comes 5M at last! He flies to a post and sings, notices his wife and 10M, and flies near. 10M hurries away.

While both males were busy threatening each other, the lady drew near the trap and entered it! I pulled the string and rushed over in the greatest excitement. Her band read A124094. *It was Una!* She had arrived the very same day as a year ago.

"Una is like herself in her lack of volubility," I noted, "but it is strange that she was so uninterested in the trap when much of last summer she ate there daily and had not been caught since April 15. Last year she was a very lion towards 4M, yet today she let herself be driven by 10M on her own land! She will have to unlearn Uno's songs which she so eagerly answered in 1929 and learn to respond to a new set."

10M triumphed at last by applying Danton's slogan of "Audacity, always audacity, and again audacity." By keeping everlastingly at it he gradually wedged in a territory between 5M, Uno, and 4M,

most of the fights being staged with 5M. Although he had come late upon the scene, in time he had a proper homestead to offer a bride, yet no bride appeared. He was our chief singer among the Song Sparrows day after day. Had he been too late and would he have to sing in vain all spring and summer? Finally, on April 8, his song was silenced as he looked proudly down upon a wife, whom I called Dieci. Both she and 10M were to return year after year to the scene where he had won a territory with so much energy and determination.

Everyone was now happily married—Uno and Een, 4M and Chatvar, 5M and Una, 10M and Dieci, not to mention the other Song Sparrows to the south, west, and north, many of which I later came to know. The nesting season was about to begin.

VERNACULAR BIRD NAMES WANTED

The Biological Survey has long been compiling the vernacular names of A. O. U. Check-List birds with a view to preparing a dictionary of them. These names consist of two groups: (1) Those available from the literature of ornithology, which is largely accessible in Washington; and (2) those that must be collected in the field. Only by thorough coverage of the country can the compilation of the local vernacular names attain anything like completeness, and that can be achieved only through coöperation.

It is hoped that all readers of this appeal may have some local names to contribute, and that some may be in position to spend time in search of vernacular names. Accurate identification is of prime importance. In gathering local names by the method of interviewing, it is suggested that use be made of good colored pictures of the birds concerned as well as of questions regarding their identity.

The recording of the locality where a name is used is of great value in the study of the origin and migration of these terms, and record of names actually employed by the people, even for the most common as well as for more unusual species of birds, is highly desirable as an aid in appraising usage. The information requested may be conveniently recorded under either the standard scientific or the vernacular name, or both, followed by locally used terms and designation of the place of use.

EXAMPLE: Northern Flicker (*Colaptes auratus luteus*). Flying Auger, Martha's Vineyard, Mass.

Coöperation in improving the extent and quality of the Survey's collection of vernacular names of birds will be much appreciated. Contributions should be sent to the Biological Survey, U. S. Department of Agriculture, Washington, D. C., for the attention of W. L. McAtee, Technical Adviser.—IRA N. GABRIELSON, *Chief, U. S. Biological Survey.*

The Identification of Juncos Banded in the Rocky Mountain States

By **Alden H. Miller**

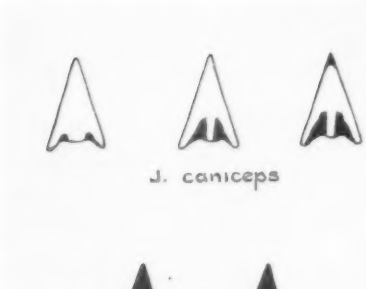
Illustrated by R. T. Peterson

IN THE winter season and during migrations the southern Rocky Mountain region is deluged with many varieties of Juncos. At least ten species and races are known from various parts of this region, some of them migrants; others are permanently resident. Any one of these kinds may display several types of plumage, certain of them so distinctive that at one time or another they have received special names in the mistaken belief that they were new species. By appropriate study of museum specimens the maze of plumage variation can be solved and winter birds may then be identified by comparison with breeding birds. But there are limits to which field identification in banding operations can safely go.

I know of no one who dares claim ability to identify as to subspecies a living, fidgeting Oregon Junco that he may be banding. Identified specimens readily available for comparison can increase a person's accuracy in such a situation, but, even then, many errors will be made. In the course of several years of special study of Juncos, during which time I have tried comparing live banded birds with study skins, certain limits to accuracy have become apparent to me. These may be described in the interests of the scientific standards of banding records, together with an attempt to outline the characters of species that are best relied upon and most readily seen by field workers.

In a survey of this kind it is best to adhere to the system of names in the fourth edition of the A. O. U. Check-List. The plan of classification of Juncos there given probably will not be altered importantly by future work upon this group of birds. Foremost in one's mind in handling Juncos should be identification with respect to one of three major types or species. These are the Slate-colored type, the Oregon or Black-headed type (including the Pink-sided Junco), and the Gray-headed type. The descriptive names of these types, although widely accepted and useful, are in themselves misleading, for sometimes Slate-colored Juncos are not slaty to any appreciable degree, Oregon Juncos sometimes are dull-headed, and Gray-headed types are of varying shades of gray.

The Slate-colored Juncos can be identified by the nature of the interrelation of color areas of the head and sides. The sides may be dusky buff, mixed gray and buff, or truly slate-colored, but they always are confluent with the slate or brownish hood. There is no sharp demarca-



DORSAL VIEWS OF BILLS

tion. Consequently, the posterior margin of the dark area of the breast is concave, not convex as in Oregon Juncos. Female Slate-colored Juncos that are heavily suffused with buff on the breast and sides may require careful examination; laterally the feathers are grayish below the tips, so extending the dark color of the hood backward into the side area. Slate-colored Juncos never have a sharply defined brick-red, or even a brown, patch on the back.

The White-winged Junco that breeds in the Black Hills of South Dakota obviously belongs to the Slate-colored group. This distinct species is marked like the Slate-colored Junco, but the color of the hood is paler slate. The white spots on the wing coverts that give it its name occasionally are difficult to see, or they are absent. White spots of this sort occur in three per cent of Slate-colored Juncos and have been responsible for many erroneous records of White-winged Juncos. The true White-wing is exceedingly large; it has a stout, tumid bill, and has some white in the fourth from the outermost tail feather; white on this tail feather rarely is found in the Slate-colored Junco. Unless these features are present, a bird with white wing-bars or spots is not a true White-wing.

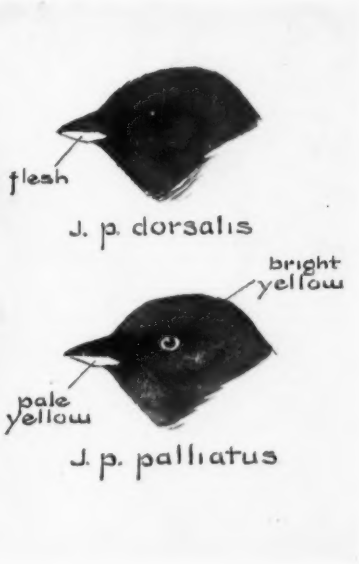
Thus the Slate-colored Junco (*Junco hyemalis*) may be separated from the White-winged Junco (*Junco aikeni*). The latter is not to be expected outside of the Dakotas, eastern Montana, Colorado and Wyoming, western Nebraska, Kansas, Oklahoma, northwestern Texas and northeastern New Mexico. The Slate-colored Junco should *not*, in field identifications, be designated by the trinomial, *J. h. hyemalis*, as such usage might imply a distinction between *J. h. hyemalis* and *J. h. connectens*. The latter is a race breeding in the Cassiar district of northern British Columbia, which Swarth first adequately described and to which he applied the old name of *connectens*.

The Cassiar race does not now receive recognition in the A. O. U. Check-List, but since it appears in the literature and is, as conceived by Swarth, a dark-headed variety of Slate-colored Junco, use of the subspecific name of the Slate-colored Junco indicates that this race has been ruled out in the process of identification. The Cassiar variety is characterized principally by a fairly sharp line of contrast between a gray back and dull black head. Except for extremely well-marked individuals, the race cannot be

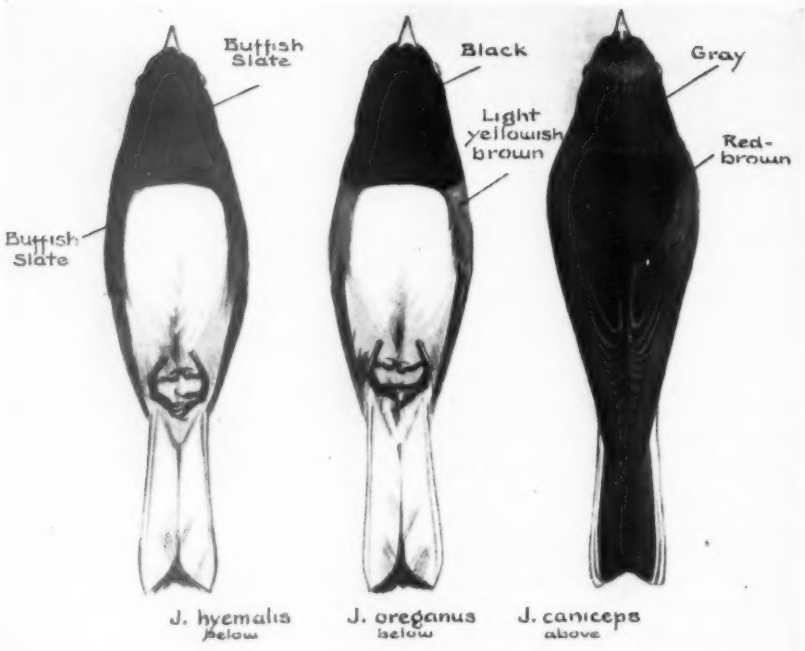
separated from *J. h. hyemalis* in the field.

The Oregon Juncos all have a convex hood margin with pinkish, yellowish or light brown sides that are definitely set off from the blackish throat and breast. The back is never slate color. Such a definition includes the various races of Oregon Junco, namely Montana (*J. o. montanus*), Shufeldt's (*J. o. shufeldti*), Oregon (*J. o. oreganus*) and Thurber's (*J. o. thurberi*) Juncos, and the Pink-sided Junco (*J. mearnsi*). The races of Oregon Junco are distinguished one from another by the tone of brown of the back, by the yellow or buff of the sides, by the degree of blackness of head, and by dimensions. The most detailed study of specimens of some of these races enables one to identify with accuracy only about eighty per cent of wintering birds. Obviously, birds of all these races should be designated merely as Oregon Juncos (*J. oreganus*) in field and banding work.

The Pink-sided Junco (*J. mearnsi*) can be distinguished from the Oregon Juncos, to which it is related, with fair accuracy. The species has broad areas of rich pinkish cinnamon on the sides. The sides are never brownish or vinaceous as in many Shufeldt's Juncos. Pink-sided Juncos have gray, not sooty or blackish heads; sometimes the feathers are tipped with buff. The back is dull brown. No one of these characters can be relied on solely, but the combination of rich side color and clear gray head is highly dependable. Female Oregon Juncos with pale heads and with sides that are fairly brightly colored have the head less clearly set off from the back and have prominent buff edgings that partially obscure the dull sooty color of the hood.



The Gray-headed Juncos lack buff or yellow in the sides, except for minute amounts on the extreme tips of the feathers of fresh plumages. They always have a sharply defined red-brown back-patch. This is the most easily recognized group of the three under consideration. Within it three forms are practical of identification: Gray-headed Junco (*J. caniceps*), Red-backed Junco (*J. phaeonotus dorsalis*) and Arizona Junco (*J. phaeonotus palliatus*). The first thing to look for in attempting to separate these three is the color of the eye and bill. These colors in birds other than streaked juveniles are dependable and are as good as any character that study-skins may show.



If the upper mandible of a gray-headed, red-backed bird is chiefly flesh-colored, the bird is a true Gray-headed Junco. There may be small black areas about the nostrils, the base of the bill and on the tip, but never in the middle section (see Figure, p. 430). If the bill is black above, from base to tip, the bird is either the Red-backed or the Arizona Junco. Neither of these last two species has ever been found ranging north of New Mexico and Arizona.

The Red-backed Junco differs from the Arizona Junco in its dark-colored eye and flesh-colored lower mandible. In the Arizona Junco the eye is bright yellow and the lower mandible pale yellow. The back of the Red-backed Junco is no redder than that of its relatives. Arizona Juncos usually have red-brown areas on the wing coverts, but Red-backed Juncos occasionally are similarly marked.

The Arizona Junco is non-migratory and probably will not be found anywhere except in the mountain ranges in southern Arizona (south of the Salt River) and southwestern New Mexico in which it breeds. Red-backed Juncos do not migrate far; they usually remain near the breeding areas in northern Arizona and central New Mexico.

By way of summary, the markings which prove most useful in the field are assembled in the following key:

A. Sides and hood confluent; margin of hood concave posteriorly.
  B. Back without bright red-brown.
    C. White spots on wing and fourth from outer tail feather almost always present; slate color lighter; size large; bill tumid (White-winged Junco, *J. aikeni*).
    C¹. White spots on wing and fourth from outer tail feather almost always absent; slate or buff color darker; size smaller (normal); bill not tumid (Slate-colored Junco, *J. hyemalis*).
  B¹. Back with bright red-brown area.
    C. Upper mandible chiefly flesh color (Gray-headed Junco, *J. caniceps*).
    C¹. Upper mandible (of non-streaked birds) entirely black.
      D. Eye dark; lower mandible flesh color (Red-backed Junco, *J. p. dorsalis*).
      D¹. Eye yellow; lower mandible pale yellow (Arizona Junco, *J. p. palliatus*).
A¹. Sides distinctly set off from hood and always some color other than gray or slate; margin of hood convex posteriorly.
  B. Head clear and gray; sides extensively rich pinkish cinnamon (Pink-sided Junco, *J. mearnsi*).
  B¹. Head dark, usually decidedly black; sides yellowish or light ruddy brown (Oregon Junco, *J. oreganus*).

A certain number of hybrids occur between different kinds of Juncos. Among the most obvious of such are the results of interbreeding of Gray-headed and Pink-sided Juncos. These hybrids may show red backs and pink sides, brown backs and gray sides, or mixtures of the colors in both back and sides. Hybrids and intermediates involving other species are more complex and are difficult to determine. Guesswork with respect to the identity of dubious individuals should be avoided. An indeterminable bird is best entered in reports merely as "Junco," with notations as to the form or forms it most resembles. Such procedure permits accurate appraisal by other persons of information that the banding or observational record may afford.—*Museum of Vertebrate Zoölogy, Berkeley, Calif.*

Miss Meyer and Dr. Palmer Honored

At the meeting of the Board of Directors, held at the American Museum, October 27, the following resolutions were adopted:

RESOLVED, that the Directors of the National Association of Audubon Societies express their great appreciation of the services of Dr. T. S. Palmer, retiring after more than 30 years as a member of the Board of Directors, and as First and Second Vice-President. As an officer of the American Ornithologists' Union, as an official of the U. S. Biological Survey, and as a director and officer of this Association, Dr. Palmer has contributed greatly to the advancement of the cause of bird and animal protection. His services to the Association have been unusually helpful because of his rich experience, combined with calm wisdom and an extraordinarily well-ordered memory, which always enabled him to serve as a mine of important information to his fellow members of the Board.

RESOLVED, that the Directors of the National Association of Audubon Societies express their great appreciation of the services of Miss Heloise Meyer, retiring after sixteen years as a member of the Board of Directors. The Association is deeply indebted to you for your practically unfailing attendance at all meetings of the Board, despite the fact that such steadfast responsibility always involved a journey of considerable length; also for your constant good counsel in furthering the cause of bird protection and your personal generosity with funds.

DR. T. S. ROBERTS

The Author of 'Birds of Minnesota'

(The following sketch is published in honor of the publication of a second edition of Dr. Roberts' book)

FORTUNATE is one who, in his early life, finds himself within the magic sphere of inspiration that encircles a great naturalist. It may be years, perhaps, before he comes to understand fully what such an association has meant to him, but long before that realization comes he is increasingly aware that this friendly relationship is quickening his sight, sharpening his ears, and opening a new world to him.

Such a friend is Dr. Thomas S. Roberts. My own introduction to him occurred many years ago, when he was called to attend a member of my family with typhoid fever. He was then a young physician at the beginning of his career. It was during this first visit, as his quick eyes swept the room, that he espied a copy of Chapman's 'Handbook' on the table. Immediately his serious manner yielded to one of lively anticipation as he exclaimed, "Who reads this?" That was the beginning of a friendship that developed my natural love of wild life into an intelligent and purposeful study of birds. Although in those early years the Doctor's rapidly increasing popularity crowded his days with professional duties, he seemed always aware of the vivid rush of life in the open, and his visits to patients who were alive to such things invariably ended in an exchange of observations concerning flowers and birds; to a 'shut-in' his coming was a golden link with the free life out-of-doors. He was always keen to detect the difference between an assumed sentimental interest—which left him cold—and an earnest desire to learn. Once assured of a person's sincerity, he generously offered every aid, patiently answering endless questions, going with one afield if he could steal an hour from his business, and even making one welcome in his home where, with his charming wife and children, one enjoyed an old-time hospitality and was allowed access to his noteworthy collection of bird-skins, which was a thrilling experience to a young bird student. He never cared greatly for sports, and even as a boy preferred to roam in the woods and fields. Nothing escaped him—plants, insects, birds and mammals awakened his interest and curiosity, and he recorded his notes in minute detail, a habit formed in the beginning that later resulted in an exhaustive card catalogue on which are noted his own observations and those of his correspondents.

Years passed—crowded years; in 1915 he took official charge of the Natural History Museum of the University of Minnesota, and he gradually withdrew from his profession as he became increasingly engrossed with this work, a dis-

tinguished part of which was the building of habitat groups of both mammals and birds. These groups equal in perfection of detail and artistry any in the country; chief among them is the Beaver Group which increases in value and interest from year to year as that little animal is more and more crowded by the forces that threaten extinction. The time came when the great wealth of data that had accumulated found shape in the book that had long been his dream, 'The Birds of Minnesota.' The widespread demand for this book, which was published in 1932, soon exhausted the first edition and led to a second, which will be out this month.

Dr. Roberts has always been a great reader and has a memory that is phenomenal; he reads very slowly, forming the words with his lips, sometimes in a whisper as if engraving the thought upon his mind. While he seems not to enjoy public speaking, his lecture-rooms are always filled with eager listeners who are impressed with the fact that he is immeasurably close to Nature although he makes no attempt to humanize it. The pictures illustrating his lectures are proof that as a photographer he is a consummate artist. His classwork is, for the most part, arduous. He gives himself unsparingly to his pupils, spending hours with them in the Museum and taking them on field excursions that often tax his strength and endurance. But if each year brings to him one or two students who develop an enduring interest in bird-life, he feels repaid. He never loses touch with these young people; in many cases the classwork is the beginning of a mutual affection that endures through the years. Many boys and girls, won by his earnestness and kindliness and impressed with the breadth of his knowledge, have come to rely on him as a counsellor and guide in many matters concerning their lives.—MARIE A. MYERS.

THE NEW COVER

The cover on BIRD-LORE, this issue, marks a radical change in design and initiates the style that is to be followed in the future. The problem of making full use of artistic and technical opportunities, within a necessarily limited budget, is a perennial one facing any individual responsible for choosing a magazine cover, and we believe that the new style is a distinct improvement. Heretofore it has been impossible to take full advantage of the two-color printing utilized on BIRD-LORE covers so many years; the new design will make the use of color much more effective and, from every aspect, more satisfactory.

The cover was designed and executed as a generous contribution to BIRD-LORE by Mr. F. L. Jaques, whose work is already well known to many of our readers through the medium of his habitat-group backgrounds at the American Museum, his illustrations for *Florida Bird Life*, and many exhibitions. Several of Mr. Jaques' paintings may now be seen at the Kennedy Galleries, New York.

The birds illustrated, Snow Geese, are too familiar to field ornithologists to require comment. They are frequently found, with Blue Geese, on the Rainey Sanctuary, and they are one of the species whose food is adversely threatened by Atlantic coast mosquito-control operations currently opposed by the Audubon Association.

BIRD-LORE'S THIRTY-SEVENTH CHRISTMAS BIRD CENSUS

BIRD-LORE's Annual Bird Census will be taken, as usual, on Christmas Day, or as near that date as circumstances will permit; *in no case should it be earlier than December 21, or later than the 27th—in the Rocky Mountains and westward, December 20 to 25th. No reports received after December 31 will be printed.*

Again this year, subspecific names—as *Mississippi* Song Sparrow, *Atlantic* Song Sparrow—are to be omitted in all cases where the birds are subspecifically identified merely on the basis of the assumption that they must be the subspecies named because of the locality in which they are found. Where they are identifiable in the field, they may be included.

The rejection of censuses will again be necessary where the rules are disregarded. These have been reduced to the absolute minimum. The principal reasons for rejecting censuses last year were lack of conformity as to date, the fifteen-mile *diameter*, and the order of the 1931 A. O. U. 'Check-List.' Those not possessing this book may find the order in the 1932 edition of Dr. Chapman's 'Handbook,' and Peterson's 'A Field Guide to the Birds.' The A. O. U. also publishes a 'Pocket Check-List' that may be had for 50 cents.

The ornithological value of the censuses will be increased as the work is standardized. Those participating are urged to cover the same territory, in the same amount of time, annually. The data thus acquired will be of greatly augmented comparative value to researchers using BIRD-LORE census data.

Without wishing to appear ungrateful to those contributors who have assisted in making the census so remarkably successful, lack of space compels us to ask each census-taker to send only *one* census. Preference will, as heretofore, be given to reports that follow prescribed rules most carefully. A census-walk should last *six hours at the very least, and an all-day one is far preferable*, as one can then cover more of the different types of country in his vicinity, and thus secure a list more indicative of the birds present. Each report must cover *one day only*, that all the censuses may be comparable.

Bird Clubs taking part are requested to compile the various lists obtained by their members and send the result as one census, with a statement of the number of separate ones it embraces. It should be signed by all observers who have contributed to it, *and the address of each observer must be given.* When two or more names are signed to a report, it should be stated whether the workers hunted together or separately. Only censuses that cover areas that are contiguous and with a total diameter not exceeding fifteen miles should be combined into one census.

Each unusual record should be accompanied by a brief statement as to the identification. When such a record occurs in the combined list of parties that hunted separately, the names of those responsible for the record should be given. Reference to the February numbers of BIRD-LORE, 1921–36, will acquaint one with the nature of the report that we desire, but those to whom none of these issues is available may follow the form given below. The date is important, and the species should be given, *in the order of the A. O. U. 'Check-List'* with, as exactly as practicable, the number of *individuals* of each species recorded.

Yonkers, N. Y. (to Bronxville and Tuckahoe and back).—Dec. 25; 8 A.M. to 4.30 P.M. Clear; 5 in. of snow; wind west, light; temp. 38° at start, 42° at return. Eleven miles on foot. Observers together. (Sharp-shinned?) Hawk, 1; Bob-white, 12 (1 covey); Herring Gull, 75; . . . Lapland Longspur, 1. Total, 27 species, about 470 individuals. The Longspur was studied with 8-power glasses at 30 ft.; blackish breast, reddish nape and other points noted.—JAMES GATES and JOHN RAND.

It has been suggested that the census be printed as a supplement to BIRD-LORE, and bound separately, but mailed out with the magazine. We urge readers to express their desires on this matter.

As many of these records as space will permit will be published in the February issue of BIRD-LORE, and it is *particularly* requested that they be sent to the Editor (at 1775 Broadway, New York City) by the *first possible mail. It will save the Editor much clerical labor if the model here given be closely followed.*—WILLIAM VOGT.

NEW OFFICERS ELECTED

At the annual business meeting of the National Association of Audubon Societies, held at the American Museum of Natural History, October 27, 1936, Kermit Roosevelt was reëlected President; William P. Wharton was elected First Vice-President; Roger N. Baldwin, Second Vice-President; Dr. J. J. Murray, Secretary; and Dr. Robert Cushman Murphy was reëlected Treasurer.

Directors elected were: Jay N. Darling, to fill the unexpired term of John H. Baker, resigned in 1934, and Dr. John C. Phillips, of Wenham, Mass., to fill the unexpired term of the late Dr. Frank R. Oastler. These terms expire in 1937.

For terms expiring in 1939, the following were reëlected: Roger N. Baldwin and Dr. J. J. Murray; and the following were elected: Guy Emerson, of New York City, Fay Welch, of Syracuse, N. Y., whose nominations were referred to in the July–August issue of BIRD-LORE, and Mrs. Robert C. Wright, of Haverford, Pa., Chairman of the Conservation Committee of the Garden Club of America.

THE CANADA GOOSE

THE NATIONAL ASSOCIATION OF AUDUBON SOCIETIES

Leaflet No. 106

By Roger T. Peterson

ON a fair March morning, a wedge of Geese tracing its way across the heavens makes one wish for wings. The flock shifts and wavers in the blue, trying to keep in order behind the leader. Like a squadron of planes in V-formation, there seems to be some sort of purpose in their flight. Their joyous babbling sounds inspired. Perhaps the next stop will be the Great Lakes or James Bay; if they are moving up the east coast it will probably be Merrymeeting Bay in Maine. One wishes for wings to join them.

The Canada Goose is more than a bird—it is a symbol, a sign of spring. The arrival of the Robin, the Bluebird or the Meadowlark in the North is not nearly so full of meaning to the winter-weary country folk as that of the migrating Geese. The farmer plowing the newly thawed earth pauses to watch their passage, feeling confident for the first time that the backbone of winter has been broken.

The peak of the Goose flight reaches the northern rim of the United States about the first of April. Then the noisy wedges can often be heard passing over the cities at night, flock after flock, intent on reaching less civilized landscapes before daybreak.

"Silly as a Goose" does not apply to the Canada Goose—to a tame puddle-Goose perhaps, but not to the wise old "honker." Beset with the troubles it faces, a stupid bird would soon lose its life. The centuries have weeded out the dull-witted among the wild Geese.

Jack Miner believes the Canada Geese to be the wisest of all birds, and, of course, he would, for he understands them thoroughly. He has made friends with them, taken care of them, and watched their ways for many years.

Most boys and girls in Canada know all about Jack. So do many young people in the United States. They have heard how Jack changed from a hunter to a pro-

tector of the Geese; how he tried to attract them to the pond in his backyard at Kingsville, Ontario; and how, after he had waited several years, a flock of eleven dropped in one morning. The next year the flock returned, nearly tripled in number. From that time on, the numbers sky-rocketed. When I first visited Jack Miner's place on an Easter morning a number of years later it seemed as if every Goose in southern Ontario must be there. There were *seven thousand* birds on the pond, and the air was constantly filled with others, arriving and departing.

Jack showed us his Goose-banding trap where he caught his guests and tagged them. An aluminum band with a return address was placed on the leg of each bird. In this way he found where they went in the winter, and where they nested. Most of them spent the colder months in Virginia and North Carolina and traveled by way of Jack Miner's to the Eskimo-country on the east coast of Hudson Bay.

In the old days the Canada Goose probably nested over large sections of the United States, but with the settlement of the country it was pushed out. It is truly a Canadian bird, hardy enough to survive even on the barren islands of the Arctic.

The down-lined nest is placed on dry ground on a high spot in the marsh, or on a rock, or a little island. There the male stands guard over his mate while she broods; nor will he leave her, should an enemy come. While she flattens her long snaky neck on the ground he holds his head high and hisses at the intruder, like a barnyard Gander. The hisses are only a warning. Should the unwelcomed visitor—man, fox or dog—come too close, he swings into action. A blow from his wings is not soon forgotten.

Wild Geese are very faithful to each other, remaining mated together for many years. How different from a bird like the House Wren! Jenny may change husbands each time she raises a brood!

The five to nine buffy white eggs take nearly a month to hatch. The fuzzy yellowish youngsters are able to swim as soon as they have dried.

There comes a time in every Goose family, usually late in summer, when neither the old nor the young can fly. The young Geese have not developed their wings fully and their parents have molted the long

flight feathers. It is a trying period, but they seem to survive all right. It is no easy trick to catch a grown Goose, even when it is flightless. If very hard-pressed it can even dive.

Normally, a Goose feeds by tipping-up or standing on its head in the water. The depth at which it can pull up water plants depends on the length of its neck. A variety of water plants are eaten; along the coast eel grass is a favorite. During the recent absence of eel grass in the salt bays, the birds took to grazing in the fields, picking the tender shoots of grasses among the stubble. They like insects, too, grasshoppers especially.

When frosts and ice send the Geese out of the half-frozen bays of the North, the tapering flocks assure us that winter is at hand. There is something melancholy in their voices; perhaps this is imaginary, but certainly the joyous ring of the spring flight seems not to be there.

If you were a Goose, southward-bound, perhaps you would feel uneasy too; uneasy not only because of the dreary prospect of winter—far below on the water would be flocks of Geese; perhaps real Geese, perhaps wooden. At a distance they all look alike. Chances cannot be taken, and anything that looks like a man or a blind in the marsh must be avoided. Lucky is the Goose that passes through the danger zone without losing a feather.

We no longer have the vast numbers of Geese that crossed the continent in the days of the Indian Chiefs. In some places they are still quite common, but in other parts of the country they are almost gone. *Let's hold on to the few we have left!*

Things to Think About

1. In some localities it has been estimated that during the last ten years the numbers of Geese have dropped 30% or more. If they continued to drop at this rate how long would it take the rest to disappear?

2. Baiting is the practice of luring water-fowl to a pond with food, so that they may be shot more easily. Do you think that this practice is sportsmanlike?

3. If more Geese were to return to the nesting grounds each year than did the year before, their numbers would soon be restored. How can we bring this about?

How Far?

On an outline map of North America locate Southampton Island (north of Hudson Bay). Draw a line from Southampton Island to Kingsville, Ontario, and from there to Pamlico Sound, North Carolina. If a Canada Goose took this air-lane between its summer and winter homes, how far would it travel? Would it travel in a straight line?

Range

According to the latest check-list of the American Ornithologists' Union there are five races or subspecies of the Canada Goose in North America. They vary considerably in size. The smallest, the Cackling Goose, is no larger than a duck.

COMMON CANADA GOOSE (*Branta canadensis canadensis*). Most of North America; breeds chiefly on the mainland of Canada, to the north and to the west of the Gulf of St. Lawrence, and less commonly south to northern Colorado, Utah and northern California. Winters south to Florida and Mexico.

WHITE-CHEEKED GOOSE (*B. c. occidentalis*). The Pacific coast of Canada, from the Queen Charlotte Islands, B. C., to Prince William Sound, Alaska.

LESSER CANADA GOOSE (*B. c. leucopareia*). Breeds on Arctic Ocean from Alaska to Southampton Island.

HUTCHINS'S GOOSE (*B. c. hutchinsi*). Breeds in Arctic America; Melville Peninsula, Southampton and Baffin Islands.

CACKLING GOOSE (*B. c. minima*). Breeds on the seacoast of northwestern Alaska.

On parts of the Pacific Coast it is possible to have two or more of these subspecies wintering in the same region.

This and other Educational Leaflets are for sale, at 5 cents each, by the National Association of Audubon Societies, 1775 Broadway, New York City. Lists given on request.

Bird-Lore

A Bi-Monthly Magazine devoted to the Study and Protection of Birds and Mammals

Edited by WILLIAM VOGT
Contributing Editor, FRANK M. CHAPMAN

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BIRD-LORE'S MOTTO:
A Bird in the Bush Is Worth Two in the Hand

THE recent conference on 'Up-Stream Engineering,' held in Washington, was a significant instance of the interest of the current administration in conservation. It provided, coming immediately after the World Power Conference, an opportunity to present to engineers from many parts of the world a demonstration, by means of papers, exhibits, and motion pictures, of the basic importance of including in their flood-control and power projects adequate recognition of what might be called the earth factors. Forests, grasslands, soil and water were integrated with engineering uses.

To one interested in ecology as it concerns wild life, both from the practical and theoretical aspects, two impressions were especially strong at the conclusion of the Conference. The first was the realistic attitude of those participating; the second was the almost total neglect of the animal factor in land-use techniques as applicable to up-stream engineering.

The disagreements expressed, the obvious willingness to criticize and to accept criticism, augur well for the future of this movement. Speaker after speaker freely admitted that even specialists are a long way from solving many of the difficulties implicit in environment control. Some of the most telling criticism we have heard of New Deal projects was presented, at this meeting, by a New Deal employe, Leo Wolman, of the National Resources Committee. In this readiness to admit mistakes, and constantly to seek for more effective methods of achieving desired ends, one can find nothing but encouragement.

As to the lack of concern with animal factors, the impression left by the Conference was that the animal world had received an insufficient amount of consideration. With this seeming neglect must be contrasted admirable discussions of plant ecology in relation to the matter at hand.

It would be unjust, however, not to recognize that much—or most—of the reason for this lack should be laid at the door of zoölogists.

Those of us who devote most of our working hours to conservation efforts are constantly hampered by the lack of conclusive data concerning the organisms and environments we are endeavoring to conserve and restore. As an example, though for nearly two decades the salt-marsh retreats of many species of birds have been ravished by mosquito control, it was not until the 1936 annual meeting of the Audubon Society that an adequate paper on the effect of this wholesale ditching was presented. Armed with the information supplied by Dr. Bourn and Mr. Cottam, correction of mosquito-control abuses, and opposition to unwarranted mosquito control on the salt marshes, come more nearly within the grasp of conservationists. Though millions of acres of fresh-water marsh and swamp wild-life habitats have been similarly destroyed, we have not been able to find comparable studies of these areas.

The need for American biologists to move their centers of investigation outdoors, to concern themselves with local species, and to study living organisms, can scarcely be exaggerated. Were they, daily, faced with such quandaries as confront conservationists, they might be more alive to these needs. And by 'biologists' we do not mean only professionals. There are scores of American bird students who could, and should, be devoting their hours afield to problems of moment—if they want the wild life in which they take so much pleasure to survive.

Conclusive research cannot be accomplished in a year—though much enlightenment could be gained in one spring and summer afield. It is to be hoped that five years, or a decade, hence, should there be another conference on up-stream engineering, there may be complete recognition that plants do not exist apart from animals, and that in 'managing' an environment all components must be given the attention that is their due portion.

THE AUDUBON RESEARCH FELLOWSHIP PLAN

The establishment of a series of Audubon Fellowships at selected universities will feature the 1937 program of the National Association of Audubon Societies, according to a statement made by John H. Baker, Executive Director, to those attending the Thirty-second Annual Convention held in the American Museum of Natural History. Mr. Baker's statement follows:

"While carrying on and expanding the volume and improving the quality of educational, sanctuary and other activities, we have this past year brought home to the outdoor public the fact that the National Association of Audubon Societies has broadened the scope of its activities to cover the whole field of wild-life conservation, including preservation and restoration of environment. Birds and all other animals, vegetative cover, insects, etc., are so interdependent that our bird and animal protective efforts would be of little long-time avail unless we were to combat all forms of destruction depleting our wild life.

"New ideas and programs, in tune with developing needs, are the lifeblood of any organization. We believe the Audubon Nature Camp has demonstrated that it fills an important need and is destined to exercise a profoundly beneficial effect in furthering nature appreciation and wild-life conservation on this continent. It involves spread of knowledge and its compounding in communities throughout the nation.

"What, then, do we propose as the outstanding new feature of our program for 1937? Let us for a moment look at the background:

"The Audubon Association has for its purpose the preservation of every species of native bird and mammal. It believes that this objective is biologically sound and to man's best interest.

"Despite unprecedented expenditures for conservation of one kind or another now being made, hardly a Federal or State penny has been or is being devoted to the preservation of threatened non-game species of birds or mammals. On the other hand, very large sums are being spent on drainage, power dams, roads and similar projects that frequently directly threaten their existence.

"An ever-increasing number of hunters has for many years been overtaxing the capacity of our lands to produce game. Coincidental with this increase in hunters, there has been a decrease in acceptable habitats as a result of clearance of land, marsh drainage, obstructions to watercourses, pollution, lumbering and other human activities. No wonder the game-supply has dwindled!

"Hunters, game wardens, administrative officials and commercial interests, in order to account for this growing scarcity of game, have deluded themselves, and to some extent the public, with a false conception of the underlying causes. The present designation of all predators on game by the ignominious name of 'vermin' is a result of this false concept. Many factions of the hunting fraternity seek to annihilate all predators as a means of increasing game species. Research is showing that this is biologically unsound, and the Audubon Association must help demonstrate and broadcast the fallacy of this policy.

"At present money ..nd energy are being wasted through advertisements, contests and all manner of campaigns seeking to stir up warfare against predators. All this diversion of energy and loss of time in the finding of the true solution of the problem is to be deplored. Killing predators is entirely negative. While emphasis has been placed on shooting, pole-trapping and similar destructive methods, very little attention has been paid to the relation of cover manipulation to predation.

"As yet biological science has not undertaken many studies on the ecology of threatened animals for the express purpose of working out conservation techniques. Conservation of rare species should mean not only preservation from extinction through protection and establishment of refuges, but also active measures to increase their numbers and distribution. A fundamental weak-

ness in our conservation movement to date lies in the lack of management procedure for the increase and preservation of biologic remnants.

"*The Audubon Association therefore proposes, with the cooperation of interested organizations and individuals, the establishment of a series of Audubon Fellowships.* The plan involves the coöperation of selected universities where the research work would be carried on in detail by well-qualified, mature students, working for a degree, under the supervision of professors especially qualified to direct the project. In many cases it will doubtless seem advisable to utilize the joint services of experienced field men in a given territory, but we believe the concept thoroughly sound that the ecological study and the drawing of conclusions as to methods of preservation and restoration be in the hands of a qualified young man, possessing a fresh approach to the problem and not handicapped by pre-conceived prejudices or opinions.

"It is our belief that the average research project would require three years and an annual contribution by the Audubon Association of about $1500 to cover compensation to the student, plus travel expenses, the university to contribute the equivalent of $1000 to $1500 in services and equipment.

"Lest there be those who are getting all set to arise and say, 'What is the use of research? While you are wasting time and energy on that, the birds and animals are vanishing,' let me say that the Audubon Association is meeting and will continue to meet that challenge by current sanctuary, legislative and publicity effort. Three years, however, is a very short time. To get quick results of lasting avail, we favor the research method, properly established and carried through. I need, I think, only remind my listeners of the familiar fable about the tortoise and the hare.

"There are certain fundamental problems that we would like to see made the subject of Audubon Fellowship research. These include:

(1) Advantages of natural versus artificial production.
(2) Advantages of environmental control versus killing control.
(3) The wisdom of control of any kind on sanctuary or refuge areas.
(4) Predator-proofing the environment, including the role of buffers.
(5) Wisdom and extent of so-called 'vermin' campaigns.
(6) Wisdom and extent of control of fish-eating birds at hatcheries.
(7) Is the introduction of any foreign species ever beneficial?
(8) Wisdom and extent of use of poison baits as a method of control.
(9) Methods of mosquito control, with minimum, if any, injury to other wild life.
(10) The effect of poison sprays on wild life in the area.

"It is a rather pathetic fact that among the primary obstacles to conservation of our wild life are: the State Fish and Game Departments, the hunting and fishing magazines, and the Rod and Gun editors of the newspapers. A start seems to have been made quite recently in Pennsylvania and Ohio toward the training of personnel to fill administrative and warden positions in the Fish and Game Departments. The hunting and fishing magazines may in due course, perhaps, be induced, through pressure from their largest advertisers, to alter their viewpoint and cease encouraging preferential treatment of game and widespread destruction of those varieties not considered game or song species. *The Audubon Association would like to initiate, with the cooperation of the newspapers and the universities, an educational, shall I say, rather than research, project whereby the 'Rod and Gun' editors would receive opportunity to gain instruction in the fundamental principles of conservation of wild life.*

"Now to come to specific species: This research would involve not only a complete inventory but an ecological study, a measuring of the character and extent of the decimating factors, and the drawing of conclusions as to preservation and restoration. As to birds, we would like to initiate research projects with relation to the Condor, the Ivory-billed Woodpecker, the four species of Kites, the Whooping Crane, the Glossy Ibis and the Sage Grouse. As to mammals, we would like to initiate projects with relation to the desert mountain sheep, the grizzly bear and the mountain lion. To a very considerable degree these studies of individual species are bound up in the problems involved in the fundamental researches outlined above.

"The management principles and tech-

nique for successful perpetuation of any species lie in its biology. To work them out is the duty of science and should, it seems to us, be approached from a conservation management angle. We hope for enthusiastic support of this Audubon Fellowship research program by all nature lovers, ornithologists, mammalogists, biologists, universities and foundations. We hope for the coöperation of the hunting fraternity, and of the State as well as the Federal agencies, in our attempts by this method to solve many of the current problems and thus terminate many controversies and destructive practices apparently based on prejudice and lack of knowledge. We may then expect successfully to restore and preserve, for the benefit of this and oncoming generations, that bounteous wild life which is our rightful heritage."

A BRANDRETH EXHIBITION

An interesting group of paintings of birds and mammals by Courtenay Brandreth was shown at Kennedy's, 785 Fifth Ave., New York, during November.

The show included about twenty-five water colors and a half-dozen oils. The oils seemed to me lacking in vitality, both the landscapes and the birds. The best is a rather large canvas of a pair of Canvas-backs flying over water.

The water colors are outstanding in a number of respects. First of all, the artist shows an understanding of composition which is unusual in modern bird paintings. He creates an atmosphere which is a living background for his subjects; his color treatment is original and in most cases sound. At the same time, the background remains background, and rarely overshadows the birds which are his main theme. His most successful pictures are those, such as the Jumping Mallard, Michigan Canvas-backs, the Sunset Loon, and the Old Male Shoveller, in which the background is subdued so that the birds stand out vividly and strikingly alive. I have seen no modern bird paintings which more successfully combine ornithological accuracy with good painting. The Jumping Mallard in its fine simplicity of composition suggests a Japanese influence.

In a few cases Mr. Brandreth has allowed a dramatic but false color, such as his blue-green, to detract from his finely painted birds. The Surf Scoter is splendid, but the unity of the painting is injured by an over-vivid surf. The two Mallards against a cloud-filled sky are beautifully painted, but the intensity of blue in the sky makes it difficult to see the subtle and lovely drawing and coloring of the birds. One cannot help remembering that Audubon rarely if ever forgot that in a bird picture the bird has the primary right, first, last and all the time, no matter how tempting the background and setting may be.

The mammal pictures are interesting, but to me they lack the action and life of the bird portraits. The best of these are the bear and the porcupine. His one and only fish painting is well considered and executed. I am sorry there are not more in this field.

Mr. Brandreth's paintings would enrich any book on our native fauna. The exhibition was of definite interest and importance, from the viewpoint both of the bird-lover and of the artist.—R. V. C. E.

THIRTY-SECOND ANNUAL CONVENTION OF AUDUBON ASSOCIATION HELD IN NEW YORK

The Thirty-Second Annual Convention of the National Association of Audubon Societies was held in New York City, October 23-27, 1936. By many who attended it, it was voted an even greater success than the 1935 Convention

The Convention opened with a reunion dinner of the Audubon Nature Camp, at which 147 were present, including 125 of the 223 enrollees from last summer's session, although these reside in 24 states, two Canadian provinces, and one foreign country. The occasion was very informal, with emphasis on reminiscences of good times at the camp. Two new motion-picture films of the camp, campers, and surrounding wild life were shown. The dinner was held in the Bird Hall of the American Museum of Natural History, and a typical camp menu was served.

Between the camp dinner and the initiation of the convention meetings, two field-trips were held. On Saturday morning, 100 people went by bus and private motor to Cape May Point, N. J., under the leadership of Messrs. Allen, Peterson and Pough. Before they returned to the city on Sunday night, they had seen 118 varieties of birds, many of which were new to them. The outstanding find on this trip was a Raven, but the most thrilling spectacle was afforded by the great flocks of migrating birds milling about in the sky, undecided as to whether to venture the water hop from New Jersey to Delaware. On Sunday morning, 62 observers went by bus and private motor to Montauk Point, L. I., visiting en route such famous concentration points as Carman's River, Shinnecock Bay, Mecox Bay, and Great Pond. The leaders were Messrs. Cruickshank and Walsh. The total number of varieties of birds encountered on this trip was 86. En route back to New York the entire party stopped for warming cups of coffee and other refreshments and enjoyed the hospitality of Dr. and Mrs. William T. Helmuth, III.

The first day of the speaking program was devoted to addresses by the staff of the Association. These included an account of the educational work carried on in Florida by Mr. Alden H. Hadley, and on Long Island, in coöperation with the Bird Club of Long Island, by Mr. Allan D. Cruickshank. Mr. Fay Welch, Chairman of the Educational Committee, reported on 'The Association's Educational Results of the Past Year,' and Mr. William Vogt discussed the many-horned dilemma to which the editor of BIRD-LORE must try to accommodate himself. Dr. T. Gilbert Pearson told of bird-protection in the countries to the south of the United States, and this is printed on page 453 of this issue of the magazine.

Mr. Roger T. Peterson gave an illustrated lecture on 'Nature Study and Conservation,' indicating how naturally an initial interest in birds or other wild-life forms leads to enthusiastic desire to further their preservation. Mr. Robert P. Allen, Sanctuary Director, told of activities and accomplishments on the Association's far-flung chains of wild-life reservations, and showed motion pictures of White Ibis and Burrowing Owls taken in Florida last winter by Mr. Walsh. Mr. Alexander Sprunt, Jr., Supervisor of Southern Sanctuaries, recounted the encouraging results obtained through protection of the Great White Heron, and the initial efforts to protect the breeding White-crowned Pigeons in the Florida Keys. This story of the Great White Heron is summarized elsewhere in this issue. Mr. Richard H. Pough outlined the Association's point of view toward predators and spoke of the difficulties encountered in combating prejudices against them. Mr. William Vogt spoke on 'The Biological Basis of Conservation,' summarizing the natural laws within which conservation policies must be framed.

This series of staff addresses, with uniform theme, led with impressive logic to the conclusions and proposals contained in Mr.

John H. Baker's presentation of the proposed Audubon Fellowship Research Plan, given in full on page 444 of this issue of BIRD-LORE.

New Approach Conspicuous

Many of those attending the meeting, especially men engaged in wild-life research, remarked on the Association's new approach to the problems of conservation, implicit in the addresses given by the members of the staff. Stress was placed on the importance of consideration of the effect of all elements in the environment of any threatened wild-life species; on the need of treatment and management of that environment as an essential complement to full protection.

It was obvious from the reports given during the first day that the Audubon staff is fully alive to the fact that our outdoor resources of forest, soil, water and grassland, with the native wild life that populates them, constitute national wealth that must be conserved. Second, that on many fronts these natural resources are being attacked, destroyed and wasted, with only a few individual exploiters profiting. And, third, that a vigorous battle against the destructive forces is being waged, with considerable hope of substantial saving of this part of America's heritage.

Monday evening was devoted to educational activities. Miss Gertrude J. Bogart, of the Girl Scouts, Mr. Lester Scott, of the Camp Fire Girls, Dr. James E. West, of the Boy Scouts, Dr. C. B. Smith, of the 4-H Clubs, and Mr. Willard Beatty of the Bureau of Indian Affairs, discussed nature education and conservation in relationship to the programs of their organizations. Mr. Carl W. Buchheister, Director of the Audubon Nature Camp, and Secretary-Treasurer of the Massachusetts Audubon Society, spoke on 'Promotion of Nature Appreciation and Wild-Life Conservation through the Audubon Nature Camp Idea.' Mr. Allan D. Cruickshank gave an illustration of the kind of talk to boys and girls that is proving tremendously popular and successful in arousing their great interest.

Mr. Kermit Roosevelt, President of the Audubon Association, awarded the Audubon Gold Medal to Leo Deming, of Terre Haute, Indiana, winner of first prize in the 1935–36 Junior Audubon Club Contest. Deming arrived in New York on the day of the camp dinner, added several birds to his life-list on the Cape May field-trip, attended sessions of the Convention, and devoted the last part of his week in New York as a guest of the Association to seeing the Metropolitan sights that most interested him. As this was his first visit to New York, he obviously had a thoroughly enjoyable time and returned to Indiana full of ideas as to ways of furthering Junior Audubon Club organization and promotion of wild-life conservation in that state.

The first hours of Tuesday morning were devoted to the annual business meeting, with election of Directors as reported elsewhere in this issue of BIRD-LORE.

The first formal paper of the morning, by Mr. Kenneth A. Reid, of the Izaak Walton League, on the subject of 'Pollution Control,' is printed virtually *in toto* in this issue of BIRD-LORE. Mr. Cyril S. Robinson, Associate Forester, Santa Barbara National Forest, reported on the pitiful remnant of California Condors now found only in the Santa Barbara National Forest. He attributed the reduction in these birds to disturbance by man of the birds' natural habitat, due to increasing settlement, reduction in the amount of available carrion, poisoning by stockmen as a by-product of coyote control, and killing by the ignorant in the belief that the birds are predatory.

Predators Necessary to Wild Life

Dr. Harold C. Bryant, Assistant Director of the National Park Service, emphasized that predatory species are essential to the maintenance of a healthy, normal, active condition of wild life. "Though for centuries there has been a vague understanding that close interrelations exist between various forms of life," Mr. Bryant said, "and that destruction of one often affects another, officials seldom give consideration to possible consequences before undertaking adjustments involving wild life. It is known that if fields are heavily grazed by sheep, the Quail population diminishes. If trees

Photo by Wm. Vogt

Directors Albright and Darling talk it over

have their dead limbs pruned off, Woodpeckers are driven to telephone poles and even houses. If squirrel control takes away the normal food of Hawks, they must either starve or turn to domestic birds and animals. When more is known, the relationship between predator and prey will reveal that they are interdependent—so much so that on the success or failure of stocking a depleted area may rest a coincident planting of the animal's enemies to keep the stock in good condition.

"Predators build up an active, alert, strong group of animals, 'on their toes' at all times. On the other hand, the alertness of animals preyed upon starves out the weak and stupid among the predators. Each is a check on the other. In nature those least able to compete lose their lives and the predator is responsible; hence, desirable evidence is increasing, indicating that the predator is more likely to be a necessary part of nature's machinery than a misfit part."

Mr. Ernst G. Holt, Head, Section of Wildlife Management, U. S. Soil Conservation Service, discussed the work of his organization in "rebuilding wild-life resources through soil and moisture conservation." He showed enlightening slides that indicate the place that food and cover plants play in the reclaiming of eroded lands and pointed out that the utilization of such material had a marked effect on wild life. In closing he said, "It has been aptly stated that a campaign for the control of a public menace falls logically into investigation, demonstration, and application. We are now in the demonstration phase of our national efforts toward the control of erosion. Actual demonstrations of methods on the ground are being vigorously prosecuted from coast to coast, and while these demonstrations started only three years ago, it is a source of great satisfaction to find that land-holders living in the vicinity of demonstration areas are already adopting many of the recommended practices. Thus we have reason to hope that the leaven is indeed starting to work, and that the time may not be too long deferred when we will find ourselves well along in the application phase. I, for one, am confident that the wild creatures of farm and range will enter upon a new and better day."

Mr. Clarence Cottam and Dr. Warren S. Bourn, of the United States Biological Survey, presented important papers as to the

effect of salt-marsh drainage on wild life. Technical in nature, they gave the first adequate treatment of this problem that has ever been made public. Their conclusions strongly support the contentions of this Association as to the extensive and intensive destruction of wild animals, both directly and by alteration of environments, in such a way as to kill food and cover plants over wide areas. It is expected that these papers will be published elsewhere, in which case they will be reviewed in BIRD-LORE.

Big Game on National Forests

Dr. Homer L. Shantz, Chief of the Division of Wildlife Management, U. S. Forest Service, discussed 'Wildlife and the National Forests.' He pointed out that more than one acre in every ten in the United States is included either in the national forests or their purchase units and stated that "to properly use this resource, to develop the area in accordance with the best land-planning program, and to raise this area to its highest social and economic use, is the purpose of the Forest Service. . . . More than 75 per cent of all the big game is found on the National Forests in the West. On them, there has been a sustained increase in most big game since these forests were established. Even in the last twelve years most of the larger game animals have doubled their numbers. . . . There is little hope," he said, "of adequately increasing the wild-life population of game-birds, game animals, or fur-bearers, unless the areas can be closed to protect the animals from hunters and trappers, and opened to hunters for the protection of food-supply as soon as overuse is indicated by the destruction of preferred browse. . . . For the preservation of wild life we have the greatest opportunity ever offered any agency, and the Forest Service has always been an outstanding agency of conservation in the country. There are now over 75 per cent of all game animals in the United States on national forests. We have about 70,000 miles of trout streams which we are maintaining and returning to a more natural and productive state. Our lakes and swamps are also being fitted into the great water-fowl restoration program.

"Fur-bearers, bear, mountain sheep and goats need further protection, as do many other forms. This we hope to give by doing our part, which includes coöperation with Federal, state, and private agencies working to the same ends."

A dire warning that if present erosion trends continue, this country will be faced with the creation of a great American desert was sounded by Mr. Earle H. Clapp, Associate Chief of the U. S. Forest Service. The western range once supported wild life that, in big game animals alone, ran into unnumbered millions, Mr. Clapp asserted.

Later it furnished forage, at its peak, for no less than 21 million domestic livestock units. It has contributed scores of millions of acres to cultivation, but still comprises nearly two-fifths of the land area of the entire United States, about three-fourths of that west of the 100th meridian, and some four-fifths of that which produces fully 85 per cent of the water in our major western streams. It is now used by some 17 million livestock units, forms an essential part of the western agricultural structure, and is vital to much of the remaining wild life of the nation.

Western Range Great Resource

The present western range is, therefore, one of our great natural and national resources. The virgin western range, Mr. Clapp pointed out, was characterized by wide differences in vegetation. Variations ran all the way from the dense sod of tall grass prairies to the low, sparse grasses on semi-deserts. Despite vast numbers of game, and drought periods which were undoubtedly as severe as those of recent years, this range maintained itself—except only for natural variations and local and temporary overgrazing by wild life—in all the years before the advent of settlers.

White men upset the natural and fairly stable equilibrium of the virgin western range; removed its natural checks and balances; exploited, abused, and neglected it. Three-fourths of the western range has declined appreciably even during the last 30 years; less than 30 per cent of the western range area is now under anything approaching reasonable management; less than 15 per cent is in reasonably good condition.

And more than 17 million animal units are forced onto the present range, despite the fact that in its depleted condition it actually can support less than 11 million!

One result of all this is forage depletion so nearly universal that exceptions serve only to prove the rule. Using depletion in the sense of reduction in capacity to graze livestock, the existing western range has been depleted no less than 52 per cent from its virgin condition. Another result concerns erosion, which reduces the productive capacity of the soil. Eighty per cent of the present western range is eroding more or less seriously; nearly half of it is contributing silt to major western streams and impairing their values for irrigation and for municipal water supplies.

Still another result of continued abuse and neglect of the western range is the reduction—often to mere remnants, with many of these remnants crowded off their original habitats—of the original wild life. But most serious of all has been the human wastage that inevitably follows misuse and destruction of natural resources.

Mr. Clapp stated that if present trends over most of the western range area continue, the net result will be creation in fact of a great American desert, and wide economic and social distress among industries and people serving and dependent upon range livestock production and a huge, interrelated crop agriculture.

The western range has many values and many uses. One has to do with the grazing of domestic livestock. Restored, and with good management, this range can ultimately contribute in full measure, through the agricultural and industrial structure of West and Midwest, to the social and economic welfare of a nation. But complete restoration of the western range will require more time than it took to deplete it to its present condition. And that was 50 years!

A second use is for watershed protection. There is an intimate relationship between range cover and streamflow. Indeed, research indicates that restoration and maintenance of forage cover is the cheapest and most practical method of holding soil in place and helping to prevent destructive floods in the range country. Over enormous areas, the value of watershed services of the western range unquestionably equals or exceeds values of it for grazing by domestic livestock or big game.

Speaking of law enforcement—
Judge R. W. Williams and R. H. Pough

Restoration of the western range is both possible and practicable. Despite present conditions, progress has been made. Twelve per cent, under administration in the National Forests for decades, is gradually improving. On smaller Indian Reservation areas, somewhat comparable conditions are in evidence or the stage is set for them. Some of the public domain is now going under administration. Occasional private owners are grappling intelligently and aggressively with their problem. The Soil Conservation Service is also attacking soil-erosion on range lands. Many private, state, and Federal agencies are taking constructive action about range-land wild life. Research has added to our store of knowledge, and helped formulate sounder conceptions of restoration and maintenance. Public opinion is awakening.

In conclusion Mr. Clapp pointed out that the major part of the problem of restoring our western range still lies before us. The period of restoration will be long, even with an aggressive attack. And the combined efforts of private and public agencies will be necessary if we are to be successful in staving off creation of a great American desert in an area which comprises, today, nearly three-fourths of that land area which lies west of the 100th meridian.

International News Photo

Kermit Roosevelt awards the Audubon Gold Medal to Leo Deming

The Waste of a Continent

The final paper of the formal sessions was an illustrated report by Dr. Ira N. Gabrielson, Chief of the U. S. Biological Survey, recounting the great progress made by the Federal Government in the restoration of water-fowl breeding-grounds in the United States.

On Tuesday evening the Association's annual dinner was held at the Essex House, New York, with 299 present. The first speaker on the evening program was Monsieur Jean Delacour, President of the French League for the Protection of Birds, who discussed the status of bird-protection in Europe, and contrasted conditions there with those in this country. Following this, Mr. Stuart Chase, author and economist, spoke on the subject, 'Rich Land, Poor Land,' taking his title from his most recent book. Mr. Chase's talk was essentially a history of the occupation and development of the North American continent in the terms of natural resource wastes by man. Mr. Chase delineated the destruction of forests, grassland, soils, minerals, water, and wild life. The dinner was concluded by a showing of motion pictures of western birds by Mr. Alfred M. Bailey, Director of the Denver Museum.

Throughout the Convention, an extensive exhibit, featuring the activities of the Association, was on display in the Educational Hall of the American Museum. There were also exhibits by the U. S. Biological Survey, the Soil Conservation Service, the Civilian Conservation Corps, the National Park Service, the Boy Scouts, the Girl Scouts and the Camp Fire Girls. The cooperation of these organizations, both as to exhibits and as to the speaking program, was deeply appreciated.

Report of International Bird-Protection*

By T. Gilbert Pearson

Our efforts to encourage bird-protection in other countries are carried on through the International Committee for Bird Preservation, organized in 1922, and fostered by the Audubon Association. National Sections of this world movement have been formed by representatives of leading scientific and conservation organizations in twenty-six countries, and many of these have engaged in active operations. The National Section for the United States is composed of members officially appointed by each of the following organizations: The American Ornithologists' Union, the Cooper Ornithological Club, the National Association of Audubon Societies, the Camp Fire Club of America, the International Association of State Game, Fish, and Conservation Commissioners, and the New York Zoölogical Society.

The work of the Committee in continental Europe is largely handled by Leon Lippens, Secretary, and his assistant, Dr. Tordis Graim, of the International Office for the Protection of Nature, in Brussels. They have the constant coöperation of Jean Delacour of France, and Dr. P. G. Van Tienhoven of The Netherlands. The past year that office has been very active in sounding European countries on the advisability of adopting a new European international treaty for bird-protection, to include North Africa, as proposed in 1935 by the delegates of the Scandinavian nations.

The Committee's efforts in the countries of the British Empire are conducted from the London Zoölogical Gardens in Regent's Park by Miss Phyllis Barclay-Smith, Subsecretary, with the active backing of Dr. Percy Lowe, eminent ornithologist of the British Museum. The past year they have been much occupied with the extensive task of making a survey to determine the extent of the present wild-fowl supply in western Europe, and have been urging the delegates to the League of Nations to adopt methods to prevent oil-pollution on the high seas.

In New York, the Chairman of the International Committee conducts correspondence and provides information, literature, photographs, and BIRD-LORE to our leading cooperators in many parts of the world. The past year his attention has been largely devoted to countries of the Western Hemisphere.

Our plan is to secure information regarding bird-protection, or the lack of it, in the West Indies, Central America, and South America; and to get in touch with societies, institutions, and individuals in those countries who may be interested, or whom we hope to interest, in the cause of bird-preservation.

Extremely little information of this nature was found to be available in the United States, and considerable difficulty has been experienced in acquiring satisfactory data from the authorities of the countries where inquiries were directed. However, we have enjoyed the cordial coöperation of the State Department in Washington and of our foreign consular service.

The object of undertaking this fact-finding campaign, obviously, is to learn the status of bird-protection in the countries to the south of us, and to do what we can to encourage their peoples to develop a larger appreciation of the economic, spiritual, and inspirational values of the living bird.

Quite aside from the pleasure that comes from disinterested efforts in seeking to be a good neighbor, North American conservationists have a very vital interest plainly at stake.

To illustrate: Many of the individuals of twenty-one species of our wild Ducks in autumn migrate south of our boundaries, some going even as far away as Chile. These species have been so reduced in recent years that in the United States not one of them is

*Read at the Thirty-second Annual Convention of the National Association of Audubon Societies held in New York City, October 26, 1936.

permitted to be shot in any state during a longer period than thirty days, with a daily bag-limit of ten birds; and furthermore, the shooting of five species of Ducks is prohibited at all times. But what happens to these birds when in winter they leave our country?

Of the Plovers, Yellow-legs, Snipe, and other shore-birds, great numbers of forty-five kinds breeding in Canada and the United States leave us for about six months each year. These birds have so suffered from overkilling that in the United States and Canada today every one of them, with the exception of the Wilson's Snipe, is protected by law at all times. But what is happening to them during the portion of the year when neither game wardens nor public sentiment protects them? I shall attempt here to answer in small part these questions by relating a few of the facts we have recently acquired. First the West Indian Islands.

West Indies

Puerto Rico. The Federal game laws of the United States are not operating in Puerto Rico. By Puerto Rican statutes, thirty-five species of birds are protected, as useful to agriculture. Specified as injurious to agriculture are: Vultures, Hawks, and Owls. The ope season for Duck shooting extends through four months, and Rails, Gallinules, Grebes, Gulls, Terns, Doves, Night Herons, and Partridges may be shot from seven to eight months of the year.

There are no game wardens, game-law enforcement being left to the police and to employes of the Irrigation Service, although any citizen may 'denounce' a person he sees violating the game laws.

Fortunately, the birds of the island have a few loyal friends, among whom are Prof. Stuart T. Danforth, of the University of Puerto Rico, and J. Adger Smyth, of the Puerto Rican Department of Agriculture. The past year they succeeded, temporarily at least, in stopping the shooting of water-birds on Cartagena Lagoon. Mr. Smyth will attempt to have the bird laws strengthened this winter, and his proposed act was submitted to me for suggestions and modifications.

Dominican Republic. Under the laws of Santo Domingo it is legal to hunt most game-birds and mammals for seven months each year—July 1 to February 1. The shooting season for wild Guinea-fowl is four and one-half months—November 1 to March 15; and Geese and Tree-ducks may be taken for four months—January 1 to May 1.

It is prohibited to hunt "Partridge and Quail" for five years, beginning with October, 1933; and introduced species are protected for five years from date of liberation.

Thirty-one species, including twenty-five that are described as "birds of song and of embellishment," are protected at all times, although many of them may be taken alive at any time except during the breeding season.

No protection is extended to "Buzzards, Falcons, Kestrels, Owls, Woodpeckers, and the Gray Kingbird and Black Grackle."

A license to hunt permits the holder to possess one fire-arm, two air-rifles, 100 cartridges, 100 caps, one quart of powder, 10 pounds of birdshot and one hunter's cutlass.

There is no special game-warden system to enforce the hunting restrictions.

The Minister of Foreign Affairs has written: "The sport of hunting is widespread throughout the Republic"; and "We do not know of the existence of any societies, scientific institutions or persons dedicated to the conservation of wild life."

Haiti. From Haiti official information has come that there are no laws whatever covering the protection of birds and game. Anyone may kill or capture at pleasure any bird on the island, whether it be native or migratory.

Cuba. Bird-protective laws have existed in Cuba at least since 1909. The open season for hunting most game is six months in length. Game can be sold in restaurants under a Government permit during the closed season for hunting. Money collected from fines must be spent for acquiring new species of animals "for the chase." Permission may be secured for catching "song or ornate birds" for the purpose of caging. Ten species of birds may not be shot. These include Pelicans, Gulls, and Frigate Birds. No protection is extended to the Turkey Buzzard, Gray Kingbird, nor to any Hawk.

There is no game-warden force. Members of the army, urban police, and employes of

"A portion of his kill one day..."

plantations who have taken the necessary oath, have the right to demand that hunters show their hunting license, and they may confiscate fire-arms of illegal hunters.

Upon the occasion of my trip to Cuba in 1924, efforts were inaugurated to save the American Flamingos, widely killed for food and extensively exported for parks and zoölogical gardens. For the next four years we met only with discouragements, but on July 28, 1928, President Machado issued a Decree, prohibiting the killing or capture of these birds in the region on which I had reported. Señor Juan F. Cantellas, General Inspector of Hunting and Fauna, has written: "It was this visit which served as an argument when I emphasized the urgent necessity of the Government prescribing a way to restrain this abusive and cruel commerce dealing with one of the most beautiful species of our Fauna."

During the past year, *viz.*, on April 3, 1936, a Decree by President Barnet rendered it illegal to export from Cuba "Flamingos, Cranes, Wild Ducks, and Pigeons of any kind for a period of twenty years"; and two months later, *viz.*, on the first of last June, he extended the Flamingo sanctuary established by President Machado, to include both the north and south coasts of the provinces of Santa Clara and Camaguey. This includes the breeding areas from which young Flamingos have long been taken in great numbers for food and other commercial purposes.

Barbados. This island is one of the favorite stopping-places of Plovers, Yellow-legs, Snipe, and other shore-birds while on their autumn migration from eastern North America to southern South America. They begin to arrive about the middle of July, and many do not depart until the end of October. The laws permit shooting as long as these birds are on the island. The hunting is done with decoys and callers in specially prepared, shallow-water areas locally known as 'swamps,' the water for which is often supplied by wells. There are two natural shooting-swamps and more than twenty artificial ones. These have been built at large expense, one of them at least having cost more than $100,000.

Recently I received a letter from an English sportsman visiting in Barbados. He said in part: "So far we have had an excellent year, and yesterday, and the day before, I got at my swamp 195 and 138 birds respectively." This shooting was on September 10 and 11, 1936—last month. He also sent me a photograph showing a portion of his kill

one day the week before, which consisted of 268 birds. Most of these birds were Yellow-legs which, during their stay in Canada and the United States, enjoy complete legal protection. What North American bird-protector can view this situation unmoved?

Turning to Central America, we find little for encouragement.

Central America

Republic of Panama. Some years ago, at the request of the Panamanian Government, I engaged in some field studies in Panama and made recommendations to its President that certain provisions for the protection of wild life should be inaugurated. Apparently these efforts produced no beneficial results, as the Panamanian foreign office some months ago advised: "There are no laws in the Republic treating this matter."

San Salvador. By Executive Order of February, 1912, the use of slings for throwing any type of projectiles was prohibited; and by a Decree seven months later, hunting of game during periods of reproduction was prohibited. There is a one-sentence law making it illegal to kill "birds that destroy insects." Traps, snares, nets, and bird-lime can legally be employed to take "birds that damage fruit." There are no game wardens, and the Minister of Agriculture states there are no societies, institutions, or important individuals concerning themselves with the preservation of wild birds.

Nicaragua. The Minister of Foreign Affairs of the Republic advises: "There have been no laws promulgated for the preservation of wild birds." A correspondent states: "Most of the hunting in Nicaragua is for business reasons. Deer are shot chiefly for their hides, which bring thirty cents a pound." He adds: "Deer are bound to be exterminated; also the alligators and crocodiles have almost disappeared because of the dealers in hides."

Honduras. Here we find no laws for wild-life protection, except an order making it illegal to hunt game with rifles of the same calibre as used by the Honduran Army. A correspondent writes of the shooting of migratory Ducks from North America. Such hunting seems to be carried on chiefly with muzzle-loading guns, as shot-gun cartridges cost five times as much as they do in the United States, and few natives can afford to buy them.

We will pass on to South America.

South America

Ecuador. There are in that country some laws and decrees pertaining to birds and mammals, but their inadequacy is indicated in a letter received from the Secretary of Agriculture. He wrote: "Hunting as a means of livelihood and as a lucrative sport for the sale of animals with beautiful and rare plumage, is carried out principally in the Oriental region of Ecuador by the natives who sell the animals in the mountain villages for ornaments or take them to the ships arriving with tourists."

However, it is a pleasure to record that, yielding to pressure from foreign naturalists, an Executive Decree, first published in 1934 and augmented in 1935, created a sanctuary for wild life in the Galápagos Islands.

Peru. Some idea of the situation in Peru regarding most birds may be gathered from the statements of two observers. One, a letter transmitted from the American Embassy in Lima, says: "There exists in Peru no protection whatever for birds or any other animals, except the vicuña. There is a very definite destruction of both Partridges and Ducks." He tells how the breeding-grounds of native Ducks are burned over to make it easier to secure the eggs for food, but he makes no mention of the fact that guano-producing birds resorting to the sea islands enjoy a greater immunity from disturbance than was formerly the case.

Dr. R. C. Murphy, in 'Oceanic Birds of South America,' writes: "Contributing causes to the vast diminution of the Peruvian Penguins are found in the activities of the native coastal fishermen, who eat the eggs whenever they can get them, and also carry off the young to their villages, or to peddle in Peruvian cities."

Chile. Throughout the 2600-mile length of this republic, hunting is permitted for one-half of the year.

In having the game laws of Chile translated into English, we found that birds are not listed according to their Latin or Spanish

names. Only Indian names are used, and these the Chilean Consul in New York has been unable fully to interpret for us. We have gleaned, however, that for an indefinite time protection is extended to certain species, including Hummingbirds, Woodpeckers, Spoonbills, and at least one Owl. Among animals named as injurious, we find listed Cormorants, Sparrows, Eagles, rats, and mice.

Colombia. Mr. William Dawson, of the American Consulate in Bogotá, writes: "The Legation is informed that there are no existing laws in Colombia dealing with wild-bird preservation." A Colombian sportsman writes that the most important hunting is for Pigeons and Ducks, and that no hunter is satisfied if he does not take 50 to 100 birds in a day.

Bolivia. A 'circular' was issued by the Government in 1922 prohibiting the hunting of aquatic or terrestrial birds, as well as the gathering of eggs, over a period of six months each year. Of this, Mr. Muccio, United States representative at La Paz, states: "This circular is practically unknown, and there being no enforcing authority, birds are being killed indiscriminately throughout Bolivia during the entire year."

In *Argentina*, *Brazil*, and *Uruguay* conditions in some respects are the best in South America. However, in that zone the bulk of several of North America's most important migratory shore-birds spend several months, and the native hunters levy a very heavy toll upon their numbers.

Mexican Bird Treaty

We are much rejoiced by the successful termination of the long-continued effort of our state and agricultural departments in securing a bird-protective treaty with Mexico. It now only awaits final action by the Mexican Congress. It is to be hoped that, in accordance with the machinery provided, more birds may be given protection under the treaty.

In North America we have experienced vast losses in our bird life due to wasteful methods in exploiting this great national asset. Also, of late years, we have learned, and put into practice, some of the most effective methods employed anywhere in the world for wild-life preservation.

It is clearly our duty to transmit to the peoples of other American countries the results of our experiences, with the hope that these may serve as object lessons of what to avoid, and also to encourage them to try certain methods of preservation which we are now finding profitable.

In concluding, I may remark that expenses of our office work for international bird-preservation the past year, as well as in former years, have been borne by a special fund contributed by people who are interested in the living bird wherever found, and who realize that our obligations to the birds of our United States do not end when, in their natural migrations, they pass for a time beyond our boundaries.

Fellow members, if there be those who think that such conditions as I have described as existing to the south of us could not have occurred in our country, it might be recalled that in the majority of our states birds were receiving no better protection when thirty-five years ago a little group of us began the pioneer efforts to save the birds of North America.

WITH THE WARDENS

A Favorable Report on the Great White Heron, and Other News of Sanctuary Activities

There is no species of bird in North America whose status is being so frequently and accurately reported as that of the Great White Heron. Since this bird is one of those nearest extinction on this continent, repeated and careful studies of its condition are possible over its entire range. It is not often possible to obtain in a few months a complete and definite report on the results of warden protection, but in the case of the Great White Heron this can be, and is being done.

Those Association members who attended our recent Convention or the A. O. U. meeting in Pittsburgh, heard with gratification the report of Alexander Sprunt, Jr., on his October survey of the Great White's range. It will be recalled that we began our work for this species in January, 1935, with an estimated total stock of 211 birds. Then came the tragic hurricane of the following Labor Day and a loss of approximately 30 per cent of the entire Great White population. During the winter nesting season that followed, wardens were placed on guard day and night at strategic locations in Florida Bay and on the lower Keys. In order that any shift in concentrations or other important changes might not be missed, aërial surveys were made of the Great White's range in February and October, 1935, and in January, February, April, and October, 1936.

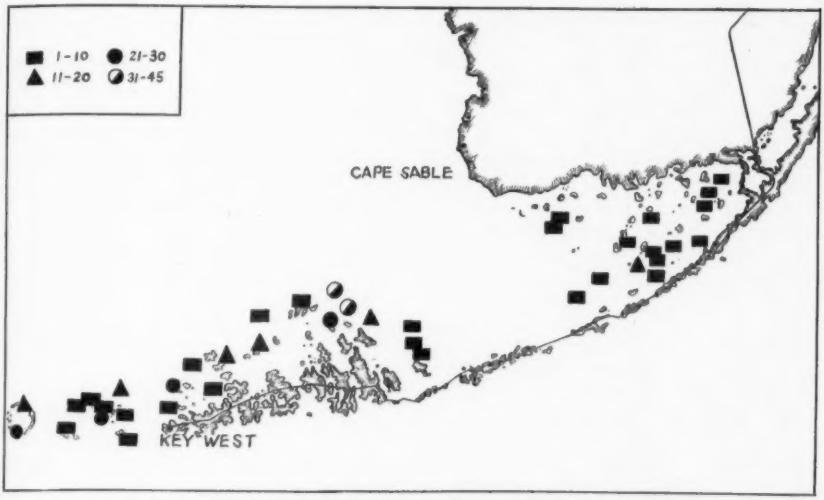
The survey of October 2–4, 1936, checked every square foot of the Great White's range. Result: 412 individuals, adults and young. Until these numbers have been steadily increased to several times the present count, we may not feel that the Great White Heron is safe.

The accompanying map is an accurate portrayal of the distribution of all Great White Herons observed on the October, 1936, survey. The various symbols are a key to the size of the different groups of birds. As pointed out by Mr. Sprunt, the gradual increase of this species will greatly enlarge the demands on our warden service, and our responsibilities will be extended in direct proportion to our success. Work on the Over-seas Highway is progressing rapidly and its completion in another year or eighteen months will make the entire Keys area accessible to the automobile. To quote Mr. Sprunt, "Areas now almost inaccessible because of the trouble entailed in reaching them, will be wide open. Tourists will certainly increase by leaps and bounds. All of the Keys will be available, and this means that the wild life will suffer in consequence, as it always has when country is opened up. It will mean increased warden service, or will demand such. It is hoped that enough progress can be made toward making it effective before the highway is open, to leave a strong impress, at least upon the people of the Keys, that the Association is determined to leave no stone unturned in bird-protection. Their attitude will doubtless be noticed by the tourist, and if sentiment in the Keys is for the birds, the stranger will sense it. At no time in history is protection more vital than in that natural wonderland of the Florida Keys."

Progress in Southwest Florida

Our three wardens on the southwest coast of Florida turned in a mileage of 661 for October, in addition to aërial surveys on the 3d and 30th that totaled 325 miles. In these flights, as in those over the range of the Great White Heron, we again had the cooperation of the U. S. Coast Guard.

As October is usually the month when large flocks of coastal-roosting birds begin the trek inland, to what may be termed prenuptial roosts near the heads of the rivers, it has always been a problem to follow these movements and locate as quickly as possible the main concentrations. Formerly, this meant many slow, tedious miles by boat, up rivers, down rivers, across inland bays, and



Entire range of Great White Heron, showing location of 412 birds. Survey of October 2, 3, 4, 1936. Symbols indicate approximate number of birds in each group

to the end of deep, narrow creeks that finally lost themselves in the sawgrass. It also meant weeks of uncertainty as to what the birds were doing and what they might be expected to do next. This uncertainty has been very largely eliminated through these surveys from the air.

The early October flight revealed that no roosts were yet established inland, although large feeding concentrations were observed on the glades between the cypress and mangrove swamps. In these feeding flocks unusually large numbers of American Egrets were noted. Shortly after the middle of the month the shift became perceptible, birds dropped off in nearly all the coastal roosts, and the wardens moved up the rivers to check known roosting locations by boat. The flight on the 30th indicated that inland roosting was still in the transition stage and the only important observation was an extensive feeding area near the Tamiami Trail, not previously occupied. Prenuptial roosts established during November will be quickly located and patrols arranged to guard them with the greatest possible effectiveness.

The late nesting season, not completed until October 19, permitted the banding of a small number of fledglings as a beginning in the intensive study of distribution and movements, plans for which were mentioned in BIRD-LORE for July–August. Six species have thus far been included and the greatest number banded to date are Snowy Egrets and Louisiana Herons. In addition to the bands issued by the Biological Survey, these birds have been marked with celluloid bands in four colors, based on a key that will be an index to certain of their movements.

Warden Edward J. Reimann, who went on the job September 1, has listed 132 species along the southwest coast (to October 29), including such comparative rarities for that section of Florida as the American Oystercatcher, Whip-poor-will, and Lark Sparrow.

More on the White-crowned Pigeon

We reported in the last issue that the White-crowned Pigeons were completing their nesting on the Keys late in August, and moving southward. Warden James Durden, who has been doing yeoman service over the large area included in his patrol, reports that on six Keys where the Pigeons nested under his watchful eye, 107 pairs brought off their young successfully.

As a result of shooting on the Keys, chiefly by tourists from the North, Durden placed large wooden warning signs at Pelican

Roost and Dove Creek Slough. Mr. Sprunt reports, following his trip to the upper Keys in early October, that the signs have been of a distinctly deterrent character. The proprietor at Pelican Roost told Mr. Sprunt, "I don't see anything like the guns that I did a few months ago." A great many motor parties stop at this man's place, and he stated that previously many of these people exhibited firearms of one kind or another.

On September 30, Durden observed a Flamingo near the edge of Ramshorn Shoal, north of Captain Key. This is on the route from Tavernier to Buttonwood Keys, where Durden has his permanent camp. Mr. Sprunt writes, "Durden saw the specimen as it fed, watched with and without glasses. It occasionally raised its wings over its back and fanned them lightly. The characteristic feeding, with the head apparently turned upside down, was noted, besides the unmistakable color-pattern and contour of the bird."

It was with great pleasure that Mr. Sprunt met and talked with Ellis Bradley, a son of Guy Bradley, the Audubon warden who was killed by plume-hunters at Cape Sable, thirty-one years ago. Mr. Bradley is very much pleased to know that we have named our fast patrol boat on the southwest coast after his father, and when this news reached him he determined to express his appreciation to a representative of the Association.

Wind Northwest?

As we go to press we are very close to the completion of our fourth season of intensive work at Cape May Point, N. J. The flights this year have been by far the poorest during six years of which we have records. As an example, for approximately the same period, the Hawk flights in 1935 were estimated at more than 13,000 birds, while this year they number slightly more than 5000.

During the 1935 flight season there were northwest winds for an equivalent of 12.5 days. During the present year this equivalent was only 4.5 days. In 1932 the Hawk flight totaled 10,600, and northwest winds prevailed for the equivalent of eight days during the season.

Mr. James T. Tanner, the observer in charge this year, has reported that 325 Hawks were killed, Sharp-shins and Cooper's with the exception of six. This does not represent an improvement over other years, in spite of the stringent measures that have been taken to prevent shooting. According to the record, the average kill, since the Audubon Association has been supervising the gunning and enforcing the state law as it relates to protected Hawks and other birds, has been 6 per cent of the total flight. The kill this year represents just 6 per cent of the total flight.

Thirteen species of Hawks, Eagles, and Vultures were included in the Cape May flights this season, with Sharp-shins again leading the procession. Most of the numbers were extremely small and there were almost as many Bald Eagles as Sparrow Hawks!

For the first time, banding operations were attempted at Cape May Point. Mr. Tanner constructed a number of different types of traps, but the poor flights prevented any extensive results.

The Coming Year

Many BIRD-LORE readers were unable to attend the Annual Convention. To you we should like to repeat our thanks for your support, both moral and financial, that made our sanctuary work possible during the past year. If you have been a constant reader of these pages, you have followed our problems with us and are familiar with our program and policies. During the year ahead we hope to continue in the same fields, with additional emphasis on the species at lowest ebb.

We know that our membership is behind us in this work. Your good wishes and your tangible support are essential to the successful carrying-on of our program. Through the clearing house of our warden and sanctuary activities your help is turned into *more birds*. We have a strenuous schedule for the coming year, and we have confidence that the desired results will be obtained.—R. P. A.

Nominating Committee Reappointed

At its October 27 meeting, the Board of Directors of the National Association of Audubon Societies reappointed the Nominating Committee composed of Dr. G. Clyde Fisher, of the American Museum of Natural History, New York City, Chairman; Laurence B. Fletcher, of Boston, Mass.; and Dr. S. Prentiss Baldwin, of Cleveland, Ohio.

Film and Photo Department Organized

A new department of the National Association of Audubon Societies has been organized, under the direction of Miss Dorothy Fox, with the purpose of making the Association's large collection of lantern slides, motion-picture films, and still photographs as useful as possible. The hundreds of pictures—including the recently acquired William Leon Dawson collection—are being classified and filed so that they may be available at all times, and preparatory to establishing a picture service on a business basis.

In time, it is hoped, the collection will include pictures by all the leading bird photographers in North America; these, added to the vast number of subjects already on hand, should make it the most complete bird picture service in the United States. Photographers who are interested in having the Audubon Association act as broker for them are urged to communicate with Miss Fox, Room 410, 1775 Broadway. Pictures will be distributed at the regular picture service fees.

The motion-picture library is also to be enlarged, with a careful selection of wild-life and conservation subjects, most of which will be available in the 16 mm. size. There will be a rental fee on all these pictures released.

Miss Fox was for nearly three years the Director of the Entertainment and Educational Department of the Izaak Walton League National Headquarters in Chicago. She was the only woman director in the League.

Audubon Staff Attends A. O. U. Meeting

The Audubon Association staff was well represented at the fifty-fourth stated meeting of the American Ornithologists' Union, held at Pittsburgh, October 20–22. Dr. J. J. Murray, of the Board of Directors, and Mr. William Vogt, Editor of BIRD-LORE, were elected members. Papers read by members of the staff were: 'Proposed Fellowship Researches Involving Preservation of Threatened Species,' by Mr. John H. Baker, announcing the new plan as is reported on elsewhere in this issue of BIRD-LORE; 'The Great White Heron in 1936,' by Mr. Alexander Sprunt, Jr., bringing the population figures for this species up to date; 'Flock Movements of Herons, Egrets and Ibises,' by Mr. Robert P. Allen, discussing some of the conservation problems posed by the wanderings of these birds; and 'Effect of Mosquito Control on the Ecology of Salt Marsh Birds,' by Mr. William Vogt, describing the widespread destruction of food and cover plants utilized by many species of resident and migratory birds.

Readers of BIRD-LORE who wish information concerning ornithological progress in North America during the past year, are urged to consult the forthcoming issue of *The Auk* for a complete list of papers presented at the Pittsburgh meeting.

Junior Club Executive Added to Staff

Miss Nancy Woodbridge, an enrollee of the Audubon Nature Camp, has been placed in charge of the Junior Audubon Club department. Miss Woodbridge was born in Massachusetts in 1913, and was graduated by Mount Holyoke, after studying with Dr. Ann Morgan, with a major in zoölogy. She specialized in marine and fresh-water ecology studies. She also studied at the Cold Spring Harbor Biological Laboratories.

Miss Woodbridge has served as a nature counselor in girls' camps, as a student-teacher at the City and Country School, New York, and as a teacher in Philadelphia. Inquiries

relative to the formation and promotion of Junior Audubon Clubs should be sent, by teachers and other youth leaders, to Miss Woodbridge, at the national office, 1775 Broadway, New York City.

New By-Law Adopted

At a meeting of the Board of Directors, held on November 27, the following by-law relating to the pension system was adopted:

"There shall be a further Committee to be known as the Pension Board for the establishment of a fund to be known as the Pension and Insurance Fund of the Association and for the administration thereof. Such Pension Board shall consist of seven members, four of whom shall be appointed by the Board of Directors from their number and three of whom shall be appointed by the regular employes of the Association from their number. The members of such Pension Board shall serve for one year or until their successors are appointed, and a majority of the members of this Board shall constitute a quorum for the transaction of business. The Pension Board shall be governed by by-laws prescribed by it, subject, however, to the approval thereof by the Board of Directors of the Association."

Autumn at Roosevelt Bird Sanctuary

Autumn brought to this region its annual procession of migrants. At the Roosevelt Sanctuary it was the usual event of arriving and departing flocks. Our heavy crop of small fruits tempted so many to tarry, even while under the urge of the migration fever, that the Sanctuary population remained heavy even until the end of the month. One result is that but little of our wild fruits remain for winter birds. This has become an annual autumn experience. The Sanctuary, it would seem, has a wide reputation among avian autumn travelers as a safe place to stop for nourishing food. Our annual addition of flora steadily increases the Sanctuary capacity for accommodating these travelers; yet for the last eight years this expansion has never equaled the demand.—EUGENE SWOPE.

FEED THE BIRDS

The birds which one enjoys about one's home throughout the winter establish their feeding routes early in the season, and all BIRD-LORE readers desirous of maintaining feeding stations should set them up at once, if they wish to have numbers of feathered guests during the winter. *But*—and it is an important *but*—such stations should not be established unless they can be maintained throughout the entire winter. Once the birds have come to depend on human bounty, they may starve to death if the food supply fails during inclement weather.

Emergency measures, such as the Red Cross sets up in hurricane and earthquake districts, should be prepared well in advance, against the time when birds are facing starvation and death as the result of heavy snows, sleet, and protracted extreme cold. Collect a war chest now. Set up a fund that may be drawn on in time of need; the fund may be either cash or grain. Organize the means of distribution in advance of emergencies: call on Boy and Girl Scouts, Audubon members, sportsmen, hiking clubs, and school children to hold themselves in readiness. Somewhere, sometime, in the United States birds are going to want *your* help this winter.

THE SEASON

CXIV. August 15 to October 15, 1936

Several letters criticizing records in the June-August 'Seasons' were received in the BIRD-LORE office, and this note is printed to emphasize that such comments are always welcome. It is to be hoped that readers will raise objections whenever they are justified. It is the earnest desire of all concerned to make the 'Season' as accurate a record as possible. It is manifestly impossible for the Editor, in New York, to assay reports from regions he has never seen. It is sometimes difficult for Regional Editors to judge of the skill of field students reporting, unless repeated field-trips together are possible—and these are often far from possible. Therefore, the 'Season' department of BIRD-LORE cannot but profit by frank and informed criticism, and we are confident that all who are participating in this interesting work will welcome it.

Boston Region.—While temperature and rainfall have averaged nearly normal for the period under review, certain unusual conditions helped to spoil two aspects of the bird-migration. The peak of the shore-bird flight in late August and early September was broken by a constant succession of warm, 'soupy,' southerly or southwesterly gales, accompanied by an entire absence of the northeasterly storms which cause notable flights of certain of the rarer species. The land-bird migration was the poorest in years, due, in part at least, to the absence of sharp weather contrasts. Our fall 'flights,' both in number and extent, are directly connected with the number and severity of the cold 'waves,' and this year these were few and mild. The pronounced early southward drift noted in my last report continued throughout the period, and many species had already concluded their migration before any cold wave arrived.

Shearwaters continued remarkably scarce off the Massachusetts coast, little more than an occasional stray bird. They were reported in some numbers only off Block Island. There were some most unusual flights of Double-crested Cormorants, and the first European Cormorants arrived very early. Jaegers were also surprisingly scarce, but there is the usual correlation here with the Shearwaters.

The flight of southern Herons reached its peak the end of August. While Little Blue Herons were unusually numerous, Egrets were commoner and more widely distributed than ever previously recorded in Massachusetts. An undoubted Snowy Egret was found on August 30 at Little Compton, R. I. (Clement) and seen by others subsequently. As usual, the Little Blues departed southward first. The last Egrets are Connecticut Valley, September 22 (Dietrich), coast north of Boston on September 27, and still present at Little Compton, R. I., on October 12 (Clement). Except for a few records from the outer Cape, there is only one credible report of the Yellow-crowned Night Heron from the state (Essex County, Emilio).

The fresh-water Duck migration deserves extended notice. The western species were always rare to uncommon, relatively, in New England throughout the historical period. No well-informed person seriously questions the steady decrease of these birds in the last decade throughout the continent as a whole. It is positively astonishing, therefore, to witness the steady *increase* of the same species over the same period in New England. Still more striking is the fact that the accelerated decrease in the past three years in the country at large has witnessed a correspondingly accelerated increase in New England. There is, of course, some explanation of real scientific interest in terms of the general biology of these birds awaiting discovery, and it would be tragic if the resolution of this paradox were lost sight of in the war now raging between the conservationists and the sportsmen.

To summarize the situation, this fall our native Black Duck has recovered about 60 per cent of its losses due to the two recent terribly severe winters. The Wood Duck is

now common to abundant in all favorable habitats, and its steady and rapid increase can scarcely continue much longer, due to ecological limitations. The flight of Blue-winged Teal was exceedingly good, though not quite equal to last year. As regards the Mallard, Gadwall, Baldpate, Green-winged Teal, Pintail, and Shoveller, there is no historical record of such numbers in this state, these remarks applying particularly to the Baldpate, Pintail, and Teal. The first two have been in flocks rather than stray birds among the migrating Black Ducks. The last has never been seen hereabouts in such large or such numerous flocks. All these species arrived early or earlier than ever before. Most notable was a Shoveller at Little Compton, R. I., on August 30 (Clement).

The shore-bird migration was disappointing in the lack of numbers and concentration. All the rare or very rare species were reported from the outer Cape, few or none from elsewhere, but the number of records and individuals is well below the past two years. The Willet was the only species which occurred in markedly increased numbers. Notable records are: European Dunlin, first seen August 8 (large party) and collected at Monomoy, August 16 (Griscom); Buff-breasted Sandpiper, Scusset Beach, August 26 (Hagar); Squibnocket, September 3 and 4 (Hornblower and Atkins); Scusset Beach, September 20 (Davis Crompton); remarkable inland records: Marbled Godwit, Norton, September 10 (Eliot and Crompton); Knot, West Springfield, October 11 (Dietrich).

Caspian Terns in unusual numbers. Reports not only from the outer Cape, but also Scusset (Crompton), the Rhode Island coast (September 12, Clement and Eynon; September 25, Hathaway) and even inland on Wachusett Reservoir, September 26 (Crompton). More Black Terns than usual on the outer Cape (Griscom) and fewer elsewhere. A Black Skimmer appeared on Monomoy on September 6 (Griscom *et al.*), 3 on September 9 (Mr. and Mrs. Maclay; Crompton and Eliot independently); 4 on the 20th (Hagar; Dr. and Mrs. Tousey); also 3 at Little Compton, R. I., on September 20 (Clement); 12 to 16 at Eel Point, Nantucket, on September 24 (F. L. Jaques). These are the first New England records since the hurricane of 1924.

A notably severe hurricane from the south struck the coast on September 18–19. It brought some of the Skimmer records listed above; numerous reports of Northern Phalaropes and Jaegers at various 'inside' points; Red Phalaropes, an adult Sooty Tern, and a Cory's Shearwater at Nahant (Griscom); Hudsonian Godwit, 1 at Ipswich (Eliot), 7 at Scusset (Crompton); Leach's Petrel in Nauset inlet (Hagar, Garrison, Touseys); and, best of all, an Oyster-catcher at Nauset on September 21, and later the same day at Monomoy (Hagar), after seen to leave Nauset southbound (!); still present on Monomoy the next day (Hagar, Garrison, Griscom).

Much to my regret I must omit all land-bird records of chiefly local interest. The best concentration on the coast was on September 29 (Griscom and Juliet Richardson). The summer residents departed early; the transients arrived and departed early; the mild fall caused the winter residents to be late in arriving in numbers, and yielded the usual crop of remarkably late dates for stragglers in the first two groups. I know of 5 reports of Migrant Shrikes from the Massachusetts coast, but only 3 for the Arkansas Kingbird (September 3, 10, 20); Philadelphia Vireo, Cambridge, September 3 (Griscom and Juliet Richardson), Nahant, September 20 (Emilio) and 29th (Griscom and Juliet Richardson); remarkable occurrence of Orange-crowned Warblers in Essex County, all adults, on September 27, 29, and 2 on October 4 (Emilio, Griscom, Garrison and Juliet Richardson); no less than 85 Purple Martins migrating at Lonsdale, R. I., on September 7 (Alfred E. Eynon); also adult Red-headed Woodpecker, Marblehead Neck, on August 23 and 24 (numerous observers); adult female Yellow-headed Blackbird, Monomoy, on August 30 (Garrison and large party); Lark Sparrow, Newburyport, on September 27 and 28 (Emilio).—Ludlow Griscom, *Museum of Comparative Zoölogy, Cambridge, Mass.*

New York Region.—As to the reported scarcity of passerines during the 1936 breeding season, it is interesting to note that three breeding-season counts taken by the writer near Elizabeth in 1936 all showed increases over 1935. A 240-acre tract of uplands showed the highest number of breeding pairs (253) in 17 years. Newark-Elizabeth

salt-marsh total 1936 count was 952 pairs against 940 pairs same routes in 1935.

Erik Petersen reports broods of young Florida Gallinules and American Coots in Van Cortlandt Swamp late in summer.

The late summer and fall period was notable for lack of severe storms; no important disturbance until September 18–19, when a southern hurricane, with high winds, swept our shores, but brought few rarities.

The migration was without striking abnormalities. Rather more Wilson's Petrel records in coastal waters, some 2000 being reported in the Lower Bay in late September (Stephenson). Shearwater records were, with one exception, from Long Island shores; dates for Greater to September 27 (Sialis Bird Club); for Cory's to September 27 (Sialis Bird Club); and for Sooty to August 28, Easthampton (Helmuth); one Sooty reported from Brigantine on August 25 (Banner).

Notable was the flight of Double-crested Cormorants. The spectacular V's of this species were seen by the writer on every week-end trip from August 30 to October 25, winging south past the Jersey shore, some flocks of over 250 individuals. The higher numbers seen in the breeding colonies, and the increased numbers seen on migration, show a correlation that emphasizes the significance of seasonal counts on the migration routes of our day migrants.

The invasion of White Herons had not entirely disappeared by October 15. Last record of Snowy Egret, Newark Meadows, September 26 (Urner). Last record Yellow-crowned Night Heron, Brigantine, September 27 (Urner). Large migration of Great Blue Herons down the coast October 11 and 12; one flock paused to spiral in narrow circles for three minutes, then proceeded—the writer's second observation of this phenomenon.

Early fall movement of fresh-water Ducks indicated no material change in numbers of Black Ducks and Pintails. First Shoveller reported from Jones Beach on September 6 (Berliner and others); Ruddy Duck, Easthampton, on September 5 (Helmuth). Scoter migration full normal from mid-September on.

Good flight of Pigeon Hawks and Duck Hawks down the coast, especially in late September and October. Goshawk, Van Cortlandt Park, October 3 (Norse and Cantor).

Shore-birds met few storms on migration. The full list included 33 species and subspecies (possibly 34), with Buff-breasted Sandpiper the only probability for which I find no local record submitted this season. Numbers of Golden Plover were small. The Black-bellied Plover flight, as observed, was a bit below normal. Willet flight larger than 1935. Unusually heavy flight of Greater Yellow-legs and Red-backed Sandpipers down the Jersey coast on October 12. Some October flocks of Greater Yellow-legs contained upward of 150 individuals. Late Dowitchers mostly show very long bills and usually give the single-note call not heard during the Eastern Dowitcher migration. Long Island got most of the Godwit flight: extreme dates, Marbled, August 20, Brigantine (Banner) to September 14, Oak Island, 3 (McKeever); Hudsonian, August 21, Neponset (Mayer) to October 12, Tuckerton (Urner); Baird's Sandpiper records from August 17, Brigantine (Loetscher) to September 13, Jones Beach (Matuszewski and others). Frequent records of Northern and Wilson's Phalaropes, latter, Newark Meadows, to September 11 (Fechtner), and three records of Red Phalarope submitted: Brigantine, August 31 (Banner); Oakwood Beach, September 20 (Norse); Elizabeth Meadows, October 4 (Urner). A Spotted Sandpiper, Inwood, October 11 (Karsch) and a Solitary, Bayside, L. I., October 15 (Mayer) are late, as was a Hudsonian Curlew, Idlewild, October 11 (Mayer).

Scattered Jaeger records were chiefly Parasitic, August 25 to September 7.

From Long Island, Mrs. Fry reported Gull-billed Tern on August 26. Forster's Terns reached Long Island on August 27 (Helmuth) and Newark Bay on September 2 (Urner), with 100 there at the peak of the flight (Lange). Caspian Tern records scattering from August 26, Oakwood Beach (Norse) to September 20, Asbury Park (Mitterhoff).

An unusual flight of Nighthawks is reported from Port Chester by W. B. Cook. A few seen on August 30, flying southwest; 180 in one and one-half hours, evening of September 3; 1300 in one and one-half hours, evening of September 4. He writes: "They

came in waves; every two or three minutes about 30 to 60 birds would pass, some very low, others flying and feeding very high; they were in sight as far north as I could see but to the south over Long Island Sound, I saw none. They came from the northeast." The writer saw over 500 pass his home in Elizabeth, flying south, on September 22.

Other records of interest: Chimney Swift, Summit, N. J., October 10 (P. Murphy). Arkansas Kingbird, Jones Beach, September 27 (Lehrman) and Idlewild, October 4 (Mayer). Olive-sided Flycatcher, Central Park, August 24 (Cantor). Prairie Horned Lark, young, at Idlewild remained until September 2 (Mayer). Blue-gray Gnatcatcher records from August 18, Inwood Park (Norse) to October 3, Idlewild (Mayer); also Plainfield, September 6 (Hunn). Ten records of Migrant Shrike from August 2, Brigantine (Banner) to September 4, Van Cortlandt Park (E. Petersen). Warbling Vireo singing at Port Chester to September 14 (Cook). Prothonotary Warbler, Inwood Park, August 22 (Norse). Worm-eating Warbler, Botanical Gardens, October 11 (Lehrman). Orange-crowned Warbler from September 7, Botanical Gardens, to September 25, Inwood (Norse). Lark Sparrow, Jones Beach, July 25 (Sabin).—CHARLES A. URNER, *Elizabeth, N. J.*

Philadelphia Region.—Mild temperatures have prevailed throughout the period. No killing frosts have occurred to date—October 15.

A noteworthy number of Double-crested Cormorants passed down the coast of New Jersey during the late summer and early fall. Observers reported long lines of Cormorants July 19 to October 1. Single birds were first noted; late flocks containing as many as 100 individuals were observed.

The writer submits the following data on the breeding birds of Harleigh Cemetery, Camden, N. J., which may throw some light on the apparent abundance or scarcity of birds, past and present. Census was taken in 1914 and again in 1936. The area of the cemetery is 165 acres, 15 of which are marsh. A neglected field in 1914 is now occupied by lawns. Otherwise there has been little change. A singing male or actual sight of a bird was counted as one pair.

	June 15 1914	June 14 1936
Eastern Green Heron	0	1
Black-crowned Night Heron	1*	4*
Eastern Least Bittern	1	1
Wood Duck	0	1§
Eastern Sparrow Hawk	0	1
Eastern Bob-white	0	2
Florida Gallinule	0	4
Killdeer	1	2
Greater Yellow-legs	1†	0
Eastern Mourning Dove	1	0
Yellow-billed Cuckoo	2	2
Barn Owl	0	1
Screech Owl	1	0
Chimney Swift	1	4
Eastern Belted Kingfisher	1	1
Northern Flicker	6	7
Northern Downy Woodpecker	1	1
Northern Crested Flycatcher	3	5
Eastern Wood Pewee	2	0
Rough-winged Swallow	0	2
Northern Blue Jay	0	1
Eastern Crow	1	2
Tufted Titmouse	1	1
Eastern House Wren	7	5
Carolina Wren	1	0
Long-billed Marsh Wren	6	17
Catbird	4	11
Brown Thrasher	3	1
Eastern Robin	12	26
Wood Thrush	4	0
Bluebird	1	0
Starling	3	27
White-eyed Vireo	2	0
Red-eyed Vireo	4	6
Eastern Yellow Warbler	7	8
Maryland Yellow-throat	2	1
American Redstart	1‡	0
English Sparrow	5	5
Eastern Meadowlark	2	0
Eastern Red-wing	1	14
Orchard Oriole	1	0
Purple Grackle	9	10
Eastern Cardinal	3	4
Indigo Bunting	3	0
Eastern Goldfinch	1	0
Chipping Sparrow	4	3
Swamp Sparrow	10	6
Song Sparrow	12	15
Total	130 pairs	198 pairs

* Not breeding † Migrant ‡ Breeding (?) §With brood

37 species observed in 1914 (+3 not breeding); 34 species observed in 1936 (+1 not breeding).

13 species observed in 1914 not seen in 1936; 8 species observed in 1936 not seen in 1914.

Red-wings roosting at Pedricktown, N. J. (see last report), reached their peak in numbers about August 24 when 100,000 were counted by Gillespie and Potter. On the above date, also, the same observers counted 400 American Egrets and Little Blue Herons going into a roost at Pedricktown, N. J.

American Egrets and Little Blue Herons were still lingering about the southern New Jersey marshes on October 12. On this date, 30 of the former and 6 of the latter were seen at Hancock's Bridge, N. J. (Brown). The same observer reports Hawks numerous in Salem County on October 12; Marsh Hawk, 7; Sharp-shinned Hawk, 2; Cooper's Hawk, 1; Red-tailed Hawk, 2; Osprey, 4; Pigeon Hawk, 2; Duck Hawk, 1; Sparrow Hawk, 3; Bald Eagle, 2.

A fair number of Ducks had arrived at Killcohook Wild Life Refuge, Fort Mott, N. J., on October 11: Black Duck, 6000; Pintail, 500; Green-winged Teal, 100; Shoveller, 30.

Other records of interest: Skytop, Pa., October 4, Olive-sided Flycatcher (Culver); Rancocas Park, N. J., September 6, Snowy Egret (Haines); Brigantine, N. J., September 19, Oyster-catcher (Pough); Heislerville, N. J., September 7, Golden Plover; Killcohook, N. J., September 6, Willet, and October 11, Wilson's Phalarope (Potter); Hawk Mountain, Drehersville, Pa., October 18, Golden Eagle 3, Canada Goose 450—several flocks (800± observers); Hancock's Bridge, N. J., October 11, Lesser Yellow-legs, 500, an exceptional number for this date (Brown).

—JULIAN K. POTTER, *Collingswood, N. J.*

Washington (D. C.) Region.—The weather conditions in the Washington region during August and September, 1936, have been to some extent favorable for bird-study. The temperatures during August were rather high, but during September, while the temperature was not unusual, there was no very cold weather.

Migration movements of birds seemed to be about normal. The Upland Plover was heard passing over Washington on the night of August 20, and Bobolinks on the evenings of August 24 and 25. The Eastern Screech Owl still is occasionally found in the city of Washington, apparently quite at home. One was heard calling in the northern part of the city on the night of September 8. George A. Petrides reported the Purple Finch on September 20, the Rose-breasted Grosbeak on September 18 and 20, and an abundance of Black-throated Green Warblers on both of these dates.

While the singing of birds during these two months has not been perhaps up to the usual amount, due, it may be, to the very warm weather in August, yet the Red-eyed Vireo was heard as late as August 19, and the Yellow-throated Vireo up to September 6.

At Four Mile Run, Va., and along the Potomac River in that vicinity, 10 Common Terns were noted by W. B. McIlwaine, Jr., on September 19, and others were seen at various times during the month of September, from the early part of the month to the close. On September 19, other species noted by the same observer in the neighborhood of Four Mile Run were the Laughing Gull, American Coot, Great Blue Heron, Little Blue Heron, American Egret, and American Osprey.

An excellent example of the value of small sanctuaries as an attraction for birds is provided by the Roach's Run Bird Sanctuary near Washington. It is situated on the Virginia side of the river, along the boulevard extending from the city of Washington to Mount Vernon, Va., and comprises somewhat less than 100 acres, including a good-sized pond bordered by some marshy land. It was established only a few years ago and is under the jurisdiction of the National Park Service of the United States Department of the Interior. The permanent keeper, Paul H. Hodge, lives at the sanctuary. A small number of birds, such as Mallards, Pintails, Lesser Scaup Ducks, and Blue Geese, were pinioned and released. Most of these have remained on the refuge and some of them have nested and reared young. An interesting development of this refuge is the large number of birds that the few permanent residents of the place attract from time to time at all seasons of the year. Ducks of many species, and even a wild Blue Goose have visited this refuge. Perhaps the most interesting record, however, that has yet been made on the sanctuary, is that of a female Anhinga which appeared on July 29, 1936, and remained at least until August 19. This was reported by Mr. Hodge and was verified by Paul Bartsch. It is an excellent example of the possibilities for bird-study on this and similar refuges.—HARRY C. OBERHOLSER, *Biological Survey, Washington, D. C.*

Pensacola (Florida) Region.—Temperatures slightly in excess of normal, together

with a decided deficiency of rainfall, left the whole region drier than is usual at this season. Even a torrential rainfall early in October failed to bring the roadside and woodland ponds up to their normal levels, and rivers and creeks continued to run low. No winds of destructive force were experienced during the period.

Solitary Sandpipers and Lesser Yellow-legs, dependent on water in the upland ponds for their sojourn, have been scarce; but the migration of the beach shore-birds, mentioned in the preceding report as unique in variety if not in actual abundance, continued to surprise and delight all observers. A short beach trip on the morning of September 5 yielded a list of 16 species of Sandpipers and Plovers, among which were two of the rarest known in Florida—the Buff-breasted and the Baird's Sandpipers. Two of each species were seen at short range, the former the earliest I have ever known, and the latter the only ones I have ever seen in fall.

Wilson's Warbler, a new species on the Florida list, was seen under ideal conditions on October 2—a male bird in full sunlight and at short range.

Although the migration in general was disappointing, in that the prevailing clear weather allowed the greater part of the trans-Gulf flight to pass unnoted, yet more species than usual were reported earlier than ever before. They were: Golden-winged Warbler (very rare), August 27 (McClanahan); Blue Grosbeak (very rare), September 6; Nelson's Sparrow, September 20; Rose-breasted Grosbeak (Mrs. A. L. Whigham) and Olive-backed Thrush, September 26; Swamp Sparrow, October 1 (McClanahan); and Myrtle Warbler, October 11. This last, long considered our most regular fall migrant, anticipated its average arrival date by more than a week.

Other arrival dates, well within the limits of former years, include: Prairie Warbler, August 27 (McClanahan); Bank Swallow, August 30; Blue-winged Teal, Marsh and Pigeon Hawks, and Water-Thrush, September 5; Magnolia Warbler (Mrs. Whigham) and Black-throated Green Warbler, September 20; Catbird, September 22 (Mrs. Whigham); Scarlet Tanager, September 26; Tennessee Warbler, September 27; House Wren, October 3; Herring Gull, October 10 (McClanahan); Wilson's Snipe, Ring-billed Gull, and Indigo Bunting, October 11; Double-crested Cormorant (Delareuelle) and Phoebe (Mrs. Whigham), October 13; and Palm Warbler, October 14. Several regular winter residents, usually arriving during the first half of October, were still unreported on October 15.

Departing migrants, like the arrivals, displayed much irregularity, and three species stayed later than ever before recorded. They were: Mississippi Kite, last seen on September 6; Upland Plover, September 13; and Rough-winged Swallow, October 11. Other departure dates, well within the extremes of former years, include: Wilson's Plover, August 23; Gray Kingbird (rare), August 30 (McClanahan); Cabot's Tern, September 5; Crested Flycatcher, September 13; Kingbird, September 19; Purple Martin, September 20; Spotted Sandpiper and Yellow-throated Vireo, September 26; Water-Thrush (Mrs. Whigham) and Acadian Flycatcher, September 27; and Solitary Sandpiper (McClanahan) and Hooded Warbler, October 3. A heavy flight of Kingbirds passed through on September 6, and few birds of this species were seen after that date. Nighthawks were exceptionally abundant throughout August, disappearing as usual early in September and leaving only a few birds to be seen occasionally up to the end of the period. At the close of the period, Lesser Yellow-legs, Chimney Swift, Ruby-throated Hummingbird, Wood Pewee, Summer Tanager, Wood Thrush, Barn Swallow, Redstart, and Red-eyed and White-eyed Vireos (the last still in song) were present in small numbers.

The only nesting activity normal to this period is displayed by the Bald Eagle, and a pair that has been under observation for many years was evidently preparing to lay before the end of the month.—Francis M. Weston, *Bldg. 45, U. S. Naval Air Station, Pensacola, Fla.*

Oberlin (Ohio) Region.—So far as the weather in this section is concerned, it ought to be classed as par for this season. There have been no severe storms, it has not been a drought period, and the frosts have held off. The first severe killing frost did not come till this morning, October 28. Abundant rains at the beginning of the period filled the lakes of

eastern Ohio around Youngstown till the mudflats were so covered that the shorebirds largely passed them by, but around Toledo, Campbell reported a heavy shorebird, Warbler, and Sparrow migration. Some thought the Warbler migration set in early and wondered if the exceedingly dry August up in Ontario hastened it. Mr. and Mrs. Mitchell were up there during that month and reported those conditions. Comparing all the records across the state, I find migrant Warblers here from the beginning of the period to beyond its close. Several commented on the scarcity of Hawks. Those in the field most reported a heavy, leisurely fall migration in contrast to the sudden passing of the spring migration. The week of October 11 to 18 was wild Goose week across the section.

Campbell (Toledo) reported 197 varieties for the period. He found 12 varieties of Ducks and 3 of Geese on October 18; 18 of shore-birds, 4 of Gulls, 3 of Terns on September 27; 19 of Warblers, 3 of Vireos on September 13; 16 kinds of Sparrows on October 18. Did not see a single Broad-winged Hawk, nor did anyone else report one. Also recorded Double-crested Cormorant on September 14 and to date; Eastern Dowitcher to October 4; Long-billed Dowitcher to August 22; Northern Phalarope, August 22 to October 4; Golden Plover to September 27; Baird's Sandpiper, August 30 to September 6; Stilt Sandpiper to October 11.

Among other records, Roland Dede (Napoleon) noted a Cape May Warbler on October 3, a Ruby-throated Hummingbird on October 12, and he was in on the Canada Goose migration the evening of October 17.

Dr. Hicks, Director, Coöperative Wildlife Research Station, Ohio State University, gets into all sections of Ohio as much as anyone, and he has sent us the following records: September 10, 1400 mixed shore-birds and 900 Blue-winged Teal on Sandusky River below Tiffin. September 12, 1 Willet at Ashtabula. September 21, 1 Avocet at Ashtabula, 6 Knots, 3 Snow Buntings (very early). October 1, 3 Pine Warblers, 1 Orange-crowned Warbler, and 14 Rose-breasted Grosbeaks at Roosevelt Game Preserve, Scioto County. October 10, Pigeon Hawk at O. S. U. Stadium, Columbus, during football game. October 16, Solitary Sandpiper at Grand Rapids on Maumee River (a late date). October 17, 4 Cormorants on Toledo Bay and 2 at O'Shaughnessy Reservoir; 35 Leconte's Sparrows at Little Cedar Point (near Toledo), 385 Blue Geese, 1 Snow Goose, 16 Canada Geese, these Geese flying south, low to the ground, in 14 wedge formations, about 100 yards apart; 2 American Egrets, 6 miles north of Oak Harbor; 2 Forster's Terns at Toledo Bay; 3600 Turkey Vultures between Fremont and Columbus.

From Dr. Prior's records (Newark) I note his finding an American Bittern half a mile from water in a peach orchard at Lakeside on October 8. Female Marsh Hawks seemed to be numerous but he had seen no adult males. On August 27, over 100 Ruby-throated Hummingbirds around the cattails of Buckeye Lake swamp within one-half mile, 11 around his head at one time. They seemed to be eating insects.

I regret the error I made in Ball's report from Canton in the last Season report in the September-October issue. It should read "*Henslow's* Sparrow as more common this year" instead of "*Nelson's*." Ball quotes Mrs. Danner's report: "August 29, Wilson Phalarope. This beautifully marked female in spring plumage was observed for half an hour at a distance of about 6 feet and gave a fine exhibition of swimming, wading, and 'spinning' on the shallow waters of a small pond made over night by a heavy rainfall. She paid no attention to the four observers on shore." From Howard Braun's report he notes that 250 Warblers, representing 25 species, were banded. Bay-breasted Warblers were more common than usual; 44 were banded. Tennessee Warblers were second, 39 being banded. To date over 20 Myrtle Warblers have been banded, this season being the first they have been common since the fall of 1933. Blackpolls rare, with only 10 trapped—only 9 Blackburnians. No White-crowned Sparrows were found. Ruby-crowned Kinglets scarce except on October 3 when they were common. Usually bands about 10 Lincoln Sparrows but none were caught this year. He did band 12 Savannah Sparrows, a species not usually caught. Bluebirds and Chipping Sparrows were scarce. Hummingbirds were very common on September 7. Nighthawks were a common migrant August 25 to September 19

but especially abundant on September 4 and 5.

Miss Smith, Cuyahoga Falls, observed the unusually early flight of Warblers the last week of August at Lakeside, and the same flight was noted by Campbell at Toledo. Lodge notes the scarcity of nests about Silver Lake and the Bird Sanctuary. The severe winter beat down the cattails and marsh grasses so that Soras, Coots, Florida Gallinules, and others did not stay. Wood Ducks also passed on. Mitchell's outstanding record was the hearing of the full song of the Brown Creeper on October 18. He is writing frequent bird articles in the Cuyahoga Falls *Reporter*.

Stewart, Leetonia, reports that there seemed a scarcity of Carolina Wrens in the spring but that they seemed to be back this fall in usual numbers. He found the Golden Plover at Pine Lake on September 5.

Gordon Spare and James Akers, East Cleveland, sent in a special report of shorebirds seen September 8 at Fairport Harbor, among which were a Willet, Golden Plover, and Black-bellied Plover.

Skaggs, Cleveland, on September 27, at Pymatuning Lake, found one each of American Egret, Little Blue Heron (immature), and a Snowy Egret. The latter was seen at close range and carefully noted. Rather unusual was a Hermit Thrush, White-throated Sparrows and Juncos in the Horticulture Gardens at the Great Lakes Exposition on October 10. The Hermit Thrush was feeding on the narrow strip of lawn, just as a Robin does, while hundreds of people were passing all around him.

McLaughlin, Youngstown, reported chiefly on the large water-birds. American Egrets were found from August 15 to October 4, the Little Blue Heron from August 16 to September 6, and the same for the Black-crowned Night Heron. The Wood Duck was recorded frequently from August 22 to October 18. On the latter date Baldpates were especially abundant at Pymatuning Lake, 2500 being the estimate. On September 12 a Northern Phalarope was found.—Robert L. Baird, *Oberlin, Ohio*.

Minnesota Region.—The drought continued through August and the rains that came later, while they revived vegetation surprisingly, were not heavy enough to raise appreciably the water levels in the more arid parts of the state. This forced the migrating water-fowl into the larger lakes and streams, chiefly in the eastern part of the state, and the resulting congestion gave the impression that Ducks were more abundant than usual of late years. In the opinion of some observers, northern-bred water-fowl have been reduced in numbers, the bulk being locally bred birds, most abundant being Mallards, Pintails, Gadwalls, and Blue-winged Teal. Green-winged Teal, for some reason, appeared in fair numbers earlier than usual, even before the open season. In favorable areas hunters report exceptionally good shooting, full bags being the rule, even under the restricted conditions. Sloughs along the lower Minnesota River and the bottomlands of the Mississippi River have been well populated with Mallards, Pintails, and other surface-feeding species.

There were light frosts in the northern part of the state in mid-August, with occasional freezing temperatures in September, and by mid-October the lakes and streams were ice-bound, much earlier than usual. The first freezing temperatures occurred at Minneapolis on October 12, with 18° at Duluth.

On a trip to southwestern Minnesota, September 18 to 20 inclusive, Mr. Breckenridge found the usual large fall flocks of White Pelicans at Heron Lake and Lake Shetek. Lake Benton, which was a former favored resort of these birds, is now entirely dry. Many thousands of Franklin's Gulls were present at these usual fall rendezvous. A single Starling was seen at Pipestone, in the extreme southwestern corner of the state, which completes the evidence that this bird has now penetrated to all parts of Minnesota. Several Prairie Falcons were seen. This bird seems to be entering the state from the west in increasing numbers.

Miss Jilson reports that on September 21 she saw many thousands of Ducks at Frontenac on Lake Pepin and adds "I have never seen such a large gathering of Ducks—such quantities of Mallards and Gadwalls."

Mrs. C. E. Peterson, from Madison, Lac Qui Parle County, in the west-central prairie part of the state, sends the following first-arrival fall dates—most of them trapped

birds: September 3, Olive-backed Thrush; 6th, Mourning and Wilson's Warblers; 9th, Gray-cheeked Thrush; 10th, White-throated Sparrow and Ruby-crowned Kinglet; 11th, Orange-crowned Warbler; 13th, Myrtle Warbler; 16th, Junco; 25th, White-crowned Sparrow; 30th, Hermit Thrush. October 3, Brown Creeper; 4th, Harris's and Lincoln's Sparrows; 7th, Tree Sparrow; 12th, Fox Sparrow.

On October 14, the writer and Mr. Breckenridge saw a large flock of Canada Geese feeding on the winter wheat-fields in eastern Washington County near the St. Croix River and a very large gathering of Ring-billed Gulls following a plowman in the manner of the Franklin's Gulls farther west.—Thos. S. Roberts, *Director, Museum of Natural History, University of Minnesota, Minneapolis, Minn.*

Lower Rio Grande Valley.—In our first report I neglected to state that we are working the Harlingen-Mission area. Mr. Hale spends most of his time within a 15-mile radius of Mission, and I devote the majority of my study hours to visiting a series of observation stations around Harlingen. While we make occasional trips to all other points in the 'Valley' and will report on observations made at such times, all our conclusions are based on experience in our study area, and they consequently may not apply to all parts of the region suggested by our title. We believe they will fit the whole section between Harlingen and Mission, but in many cases may not apply to the eastern section of Cameron County nor the northern portion of Willacy County. We hope later to have coöperators in Brownsville and Raymondsville, so that these areas can also be studied carefully.

September, this year, was the wettest on record. The rains began on August 28 and continued almost daily until October. Our first 'norther' was unusually early (September 28) and may have had some effect on the migration.

Some fall migration dates given by Hale for the Mission area are as follows: July 25, Solitary Sandpiper; August 5, Greater Yellow-legs, Alder Flycatcher, Black and White Warbler; August 9, Blue-gray Gnatcatcher; August 10, Swainson's Hawk, Wood Pewee, Yellow Warbler; August 13, Ruby-throated Hummingbird; August 16, Upland Plover; August 24, Yellow-bellied Flycatcher; September 5, Mourning Warbler; September 6, Least Sandpiper; September 7, Chuck-will's-widow; September 19, Sharp-shinned Hawk, Least Flycatcher, Tree Swallow, Warbling Vireo, Philadelphia Vireo; September 20, White-rumped Sandpiper; September 21, Louisiana Water-Thrush, Red-tailed Hawk; September 28, Western House Wren; October 1, Whip-poor-will; October 2, Northern Flicker; October 4, Baldpate, Pipit; October 8, Prairie Marsh Wren, Grasshopper Sparrow; October 9, Rock Wren (not previously recorded); October 11, Ring-necked Duck, Lesser Scaup, Red-shafted Flicker, Myrtle Warbler; October 12, Indigo Bunting; October 14, Brewer's Blackbird.

In the following group of migrants my date is used first, and Hale's in parentheses: August 2, Yellow-legs (August 16), Western Sandpiper (August 16), Belted Kingfisher (September 6); August 9, Spotted Sandpiper (August 11), Pectoral Sandpiper (August 11), Long-billed Dowitcher (August 16), Black-bellied Plover; August 12, Barn Swallow (August 16); August 19, White-rumped Shrike (August 31), Purple Martin (September 3); August 21, Kingbird (September 3); September 3, Phoebe (September 5), Northern Crested Flycatcher (September 19), Red-eyed Vireo; September 7, Pintail (September 20), Blue-winged Teal (September 20), Buff-breasted Sandpiper, Bullock's Oriole, Baltimore Oriole (September 19), Black-throated Green Warbler (September 21); September 8, Sycamore Warbler; September 12, Piping Plover, Snowy Plover, Sparrow Hawk (September 23); September 19, Orange-crowned Warbler (September 29); September 20, Cinnamon Teal, Magnolia Warbler, Nashville Warbler; September 27, Common Tern; October 2, Snow Goose; October 3, White-fronted Goose, Osprey (October 4), Blue-headed Vireo (October 12), Lincoln's Sparrow (October 12); October 7, Shoveller (October 12); October 11, Ring-billed Gull, Franklin's Gull (October 11), Ruby-crowned Kinglet.

In the next group Hale's dates are given first and mine are in the parentheses: August 18, Olive-sided Flycatcher (September 7),

Canada Warbler (September 3); August 26, Cooper's Hawk (October 11), Bank Swallow (September 3); September 5, Wilson's Warbler (September 19), Cliff Swallow.

The movement of the Vermilion Flycatcher into our area may be shown by the following 'first seen' dates: September 6, Mission (Hale); September 20, Donna (Mrs. D. C. Ring); October 3, Santa Maria; October 4, Harlingen; October 11, Olmito.

On August 23 I visited the Black Skimmer colony on Green Island and found some 40 to 50 nests (all early attempts at nesting had been defeated by high water). Some were freshly dug and contained no eggs, but of those that contained eggs it was observed that the usual number was three. A few eggs were pipped and one had hatched. These birds give a most interesting variation of the 'crippled-bird' act. As one approaches the nesting-ground the birds quickly take flight but as soon as the intruder reaches the nests the birds return, alight, and appear to be unable to 'take off' again. One foot appears to be injured so that the bird's progress is rather wobbly and it makes headway by flapping the wings lightly in the normal manner. Whole groups put on this act at the same time and when chased away will soon return and repeat the demonstration.—L. Irby Davis, *Harlingen, Texas.*

Portland (Oregon) Region.—The weather in this area has been warm and dry during the period, August 15 to October 15. Only about one-third the normal amount of rainfall has occurred from September 1 to date. This probably accounts for the fact that some of the birds are migrating earlier than usual, the 'last date seen' being, in many cases, about two weeks ahead of ordinary.

Mourning Doves, Band-tailed Pigeons, Robins, and Blackbirds were flocking by the middle of August in the Willamette and Tualatin valleys, and many of the Swallows had already disappeared. Water-fowl appeared several days before their usual dates, and small birds from the north and from the mountains made an early appearance.

A few birds were late in nesting. Reed Ferris, of Beaver, reported young Barn and Violet-green Swallows still in the nest on August 27. A week later they had migrated. A nest containing 4 young Cedar Waxwings was found near Clackamas on August 15 (Du Bois). They were flying on August 17.

Many Sparrow Hawks were noted by Alex Walker at Sparks Lake, in the high Cascades, the first week of the period, and a Pigeon Hawk was observed at the same place on August 15. Large flocks of Pipits appeared in that vicinity on August 16, and Mountain Bluebirds were seen on August 19. Bendire's Crossbills were abundant.

Leo F. Simon reported the arrival of waterfowl at Crystal Springs Lake, in Portland, as follows: on September 19, 17 Baldpates, 2 Shovellers, 2 Lesser Scaups, and 7 Coots. On October 4, 2 Eared Grebes, 6 Ring-necked Ducks, and 1 Pintail. By October 15, Buffleheads and Hooded Mergansers were present.

A census of the birds on a 20,000-acre area in Upper Klamath Lake, as given by Herbert H. Dill, Jr., Biologist of the U. S. Biological Survey, reads as follows: August 15, 5000 Mallards, 3500 Pintails, 2000 Redheads, 2000 Ruddy Ducks, 2000 Green-winged Teal. Most of these birds were probably hatched in that region. Other birds noted on the lake were: Farallon Cormorants, White Pelicans, Coots, Treganza's Herons, Black-crowned Night Herons, Anthony's Green Herons (4), American Egrets (2), California and Ring-billed Gulls, Forster's Common, and Caspian Terns. On October 6 all of the above were present, with the addition of the following: 200 Canvas-backs, 500 Green-winged Teal, 200 Lesser Scaups, 500 Canada Geese, 1000 American Mergansers, 100,000 Mallards, and 200,000 Pintails.

Mrs. Grace McCormac French reported about 200 Wood Ducks on the North Yamhill River, near Carlton. A similar concentration of Wood Ducks occurred there a year ago.

On September 1 lightning struck a flock of Canada Geese that were flying above the Willamette River in Portland; 20 were killed.

On September 17, off-shore from Pacific City, Sooty Shearwaters were abundant, but few other birds were seen. No adult California Murres were found (Ferris).

On September 27, Roger Tory Peterson, of the National Association Headquarters, in New York, with several members of the Oregon Audubon Society, visited Sauvais Island and the Columbia River bottoms.

There were forty-one species of birds observed, including fall migrants. On the 28th Mr. Peterson and the writer made a trip around the Mt. Hood Loop. The usual mountain birds were found, with Steller's Jays, Golden-crowned Kinglets, and Clark's Nutcrackers particularly abundant.

With the exception of Sanderlings, which were fairly abundant, Walker notes very few shore-birds along the Tillamook Coast. Five Hudsonian Curlews were observed several times from September 5 to 19.

'Last seen' dates for summer birds have been reported as follows: Carlton region (French), Western Yellow-throat, August 20; Black-throated Gray Warbler, August 27; Black-headed Grosbeak, August 28; Pileolated Warbler, September 2; Macgillivray's Warbler, Russet-backed Thrush, and Western Tanager, September 6; Vaux's Swift, September 14; Cliff Swallow, September 20; Cassin's Vireo, September 22; Violet-green Swallow, September 27; Band-tailed Pigeon and Turkey Vulture, September 28; Chipping Sparrow, October 1.

Beaver region (Ferris): Barn Swallow and Turkey Vulture, September 8; Rufous Hummingbird, September 11.

Portland region (Du Bois *et al.*): Vaux's Swift, September 14; Olive-sided Flycatcher and Cassin's Vireo, September 19; Little Flycatcher, September 28.

Fall migrants: Townsend's Warbler, Clackamas, September 13 (Du Bois); Crossbills, Scio, August 23 (Prill); Golden-crowned Sparrow, Carlton, September 14 (French); Western Lark Sparrow, Sauvies I., September 19 (Du Bois *et al.*); Varied Thrush, Netarts, September 26 (Walker); Pipits, Greater Yellow-legs, Western Savannah Sparrow, Sauvies I., September 27 (Du Bois *et al.*); Sitka Kinglet, Mt. Hood Loop, September 28 (Peterson and Du Bois); Western Evening Grosbeak, Portland, October 2 (W. H. Crowell); Scio, October 4 (Prill).—H. M. Du Bois, *Clackamas, Ore.*

San Francisco Region.—The first indication of the great southward movement of birds after the breeding season was the disappearance of our summer visitants, some of which left in late July. By the middle of August many more had disappeared, and only two species were listed by the Audubon Association in Marin County on August 16. These were the Western Flycatcher and the Yellow Warbler. About the middle of September there is a sudden increase in the numbers of these summer visiting birds which is probably due to the arrival of individuals which nested at a later date in more northerly latitudes. On September 20, Mrs. Stephens found Allen's Hummingbirds, Western Flycatchers, Yellow and Pileolated Warblers, and Russet-backed Thrushes in Golden Gate Park. About the same time there was a very noticeable increase in the numbers of Hawks, Black Phoebes, Horned Larks, Robins, Juncos, Shrikes, Hutton's Vireos, Meadowlarks, Blackbirds, Juncos, and Pine Siskins, all of which are resident in the bay region but are augmented in winter by visitors from colder regions.

Real transients, which are seen only during migration, are comparatively inconspicuous except among water-birds. Of land-birds there were records of Western Tanagers between August 20 and September 15 and Black-throated Gray Warblers between September 8 and October 12. Many other Warblers were among the oaks and maples at the same time but they belonged to species that are resident here during either the summer or winter.

The last week of September many of the species that came for the winter began to filter in and have increased to unusual numbers, perhaps because there have been no storms to cause them to scatter southward. A few very early records were Ruby-crowned Kinglet (September 12, Parmenter), Audubon's Warbler (August 25, Aldrich and McClintock), Townsend's Warbler (September 9, Cain). Other dates are Fox Sparrow, September 23, Puget Sound Sparrow, September 24 (Blanchard), Say's Phoebe, Cedar Waxwings, Hermit Thrush, Gambel's and Golden-crowned Sparrows, September 30. On October 6 our visitor from New York, Mr. R. T. Peterson, saw a Red-bellied Hawk at Orinda; and on October 9, Short-eared Owls in Alameda and a Duck Hawk attacking a flock of Northern Phalaropes near San Mateo Bridge.

Encouraging reports of White-tailed Kites seem to indicate that some pairs have succeeded in raising young this year. Commander and Mrs. Parmenter have found

Band-tailed Pigeons abundant in the Bolinas-Olema area and have added a record for a Western Grebe with three young (at Lake Merced, September 25) to the two records for nests found there in 1885 and 1926. At Phoenix Lake, on September 30, adult Pied-billed Grebes were guarding two young which still showed black and white stripes on the neck. Caspian Terns have been seen throughout the period. Judging from the numbers of Clapper Rails seen at the southern end of the bay, these birds are increasing, as are both the American and Snowy Egrets.

The arrival of many of the water-birds was covered in the last report. All of these early migrants have increased as the season advanced, with the possible exception of the Hudsonian Curlew, Wandering Tattler, and Semipalmated Plover. Eared Grebes are still scarce. Many of the Baldpates seen at Lake Merritt on October 6 were still in eclipse plumage, and the only diving Ducks present were Bluebills and Ruddies. Commander and Mrs. Parmenter saw their first flight of Shearwaters off-shore from the Cliff House on September 12. Green-winged Teal appeared in Golden Gate Park on September 26. Maximum numbers of rock-haunting birds seen at the Cliff House Rocks were: Surfbirds 15, Ruddy Turnstones 4, Black Turnstones 106. Five Knots were seen at San Mateo Bridge on September 4. Long-billed Dowitchers were first seen on August 15 and are fairly abundant. The flocks of Marbled Godwits were small until October 3, when Mr. Peterson and Mrs. Sheldon found about a thousand at Sear's Point, and by October 9 there were as many at San Mateo Bridge. Sanderling were first seen by Mrs. Kelly on September 6 on the sandy shores at Alameda. Avocets seem to find congenial feeding- and loafing-places in the salt pools and become more and more abundant there each winter. Northern Phalaropes reached their peak about August 26 and are still very abundant at San Mateo Bridge. At Carmel, Mr. Williams reports another view of a Golden Plover on August 26 and a Pectoral Sandpiper on September 11. On October 13 a large flock of Tricolored Red-wings appeared near the lagoon and remained a few days.—AMELIA S. ALLEN, *Berkeley, Calif.*

At the A. O. U. Meeting, Pittsburgh

Left to right: Francis Harper; Mrs. Margaret Morse Nice ('Uno and Una Return') and George M. Sutton (Cooper's Hawk and Kite covers, BIRD-LORE)

NATIONAL ASSOCIATION OF AUDUBON SOCIETIES

NATIONAL ASSOCIATION OF AUDUBON SOCIETIES

APPROXIMATE BREAKDOWN OF INCOME AND EXPENDITURES

FOR THE PERIOD FROM OCTOBER 10, 1935 to SEPTEMBER 30, 1936

INCOME

EXPENDITURES

THESE PERCENTAGES INVOLVE ALLOCATION OF GENERAL EXPENSES TO THE SEVERAL CLASSIFICATIONS OF ACTIVITY.

National Association of Audubon Societies, Inc.

Balance Sheet as at September 30, 1936

ASSETS

Cash, on Hand and in Banks		$3,388.02
Accounts Receivable:		
From Sales of Books, Publications, Supplies, and Advertising	$1,032.37	
Advances to Field Representatives	387.50	
Pledge of Mrs. Carll Tucker	2,500.00	
		3,919.87
Accrued Interest on Bonds Purchased		473.28
Investments (at cost or market value at date donated):		
Real Estate First Mortgages on Manhattan and Bronx properties	740,671.84	
Bonds	318,468.63	
(Market value of bonds, at closing prices September 30, 1936, was $327,330, per confirmation received.)		
Stocks	397,057.19	
(Market value of stocks, at closing prices September 30, 1936, was $501,225, per confirmation received.)		1,456,197.66
Real Estate (cost of acquisition by Transfer of Deeds or Foreclosure Proceedings)		164,643.57
Sundry Assets:		
Camp Buildings	15,245.04	
Camp Equipment	6,674.61	
Office Furniture and Equipment (depreciated value)	7,314.66	
Motion Picture and Photographic Equipment	1,160.59	
Films and Prints	2,751.20	
Camp Library	199.80	
Book Library (estimated value)	8,500.00	
Boats, Engines, and Automobiles	808.88	
Color Process Plates and Paintings (nominal value)	1.00	
Bronze Group, Roosevelt Sanctuary (nominal value)	1.00	
Sanctuary Real Estate (nominal value)	1.00	
		42,657.78
Inventories:		
Audubon Bird Cards	4,872.15	
Slides	2,610.30	
Leaflets for Junior Members	6,010.17	
Buttons for Junior Members	220.02	
Books: 'Hawks of North America'	2,547.50	
Bird Books	699.35	
Field Glasses	566.23	
Bird Houses, Feeders, Baths, and Food	77.62	
Camp Supplies	244.24	
Circulars	288.30	
Leaflets, Service Department	208.89	
Bird Charts	116.90	
		18,461.67
Deferred Expenses:		
Postage Meter Rental and Postage	125.23	
Air-Line Tickets	178.50	
Sanctuary Expense	20.00	
Camp-Promotion Expense	1,684.31	
Prepaid Insurance	1,387.91	
		3,395.95
		$1,693,137.80

FUND BALANCES AND LIABILITIES

Endowment Funds:			
General Endowment Fund		$1,021,393.53	
Permanent Fund of 1922		205,923.06	
Paul J. Rainey Endowment Fund		202,010.10	
Roosevelt Sanctuary Endowment Fund		1,070.00	
Cornelius Ayer Wood Fund		5,764.24	
Mary Dutcher Memorial Fund		7,665.04	
Laura Norcross Marrs Fund		25,119.15	
Wilhelm L. F. Martens:			
Endowment Fund No. 1		24,856.62	
Endowment Fund No. 2		23,556.30	
			$1,517,358.04
Special Funds:			
International Bird Protection Fund		$1,825.51	
Building Fund		137,268.31	
Paul J. Rainey Fund		11,174.45	
Sheldon Antelope Sanctuary Fund		926.16	
			151,194.43
Liabilities:			
Deposits in Escrow		$221.77	
Employes re Pension Fund and Group Insurance		143.47	
Accounts Payable		795.90	
			1,161.14
Reserve for Contingencies			20,000.00
General Fund Surplus, October 10, 1935		$23,337.51	
Add Credits:			
Projector Donated	$85.00		
Slide Inventory October 10, 1935 Adjustment	182.00	267.00	
		$23,604.51	
Deduct Debits:			
1934 Compensation Insurance Paid	$46.79		
Depreciation of Furniture and Fixtures (10 per cent)	812.62		
Working Fund Balances Written Off:			
General Operating Fund	6,405.77		
Sanctuary Fund	2,283.54		
Children's Educational Fund	225.04		
Roosevelt Sanctuary Fund	4,932.17		
Persecuted Species Fund	5,474.39	20,180.32	
Surplus, September 30, 1936			3,424.19
			$1,693,137.80

Surplus is just the bookkeeping balance between the Assets and Fund Balances and Liabilities; it is not available to spend, and is represented at any time by shifting proportions of various fixed (such as furniture and foreclosed real estate) and current (such as cash and inventories) assets.

Combined Income and Expenses of all Funds for the Period from October 10, 1935, to September 30, 1936

Working Funds:		
Income:		
Dues	$17,132.50	
Junior Membership Fees	14,919.50	
Contributions	29,589.18	
Interest on Mortgages	27,826.02	
Interest on Bonds	12,380.68	
Dividends on Stocks	15,030.57	
Rents—Real Estate	15,421.88	
Sale of Books, Printed Matter, Supplies, etc.	11,939.11	
Credits for BIRD-LORE included in Departmental Expense at Cost	11,818.27	
BIRD-LORE Subscriptions and Advertising	5,262.11	
Audubon Nature Camp	9,357.11	
Net Income from Camp Store	194.28	
Total Working Funds Income		$170,871.21
Expenses:		
Administrative and Clerical Salaries and Expenses	$57,309.00	
Field Representatives' Salaries and Expenses	9,076.82	
Salaries, Sanctuary Supervision, Wardens and Their Expenses	24,103.91	
BIRD-LORE to Members, Teachers, and Others	11,818.27	
Printing and Mailing BIRD-LORE	10,034.27	
Engravings	1,251.47	
Educational Leaflets	4,362.97	
Buttons Supplied to Junior Members	702.11	
Legislation	1,460.75	
Printing and Multigraphing	2,001.41	
Postage and Expressage	6,182.81	
Cost of Sales of Books and Supplies	5,782.27	
Advertising Books and Supplies	891.17	
Repairs and Improvements Sanctuaries	1,570.82	
Purchases for Sanctuary	344.73	
Feed for Water-fowl	534.20	
Taxes	2,220.16	
Gasoline	2,020.04	
Insurance	1,964.90	
Communications with Actual and Potential Members	2,417.47	
Press Clippings and Releases	1,528.94	
Envelopes and Office Supplies	1,295.01	
Annuities by Terms of Bequests	1,680.00	
Legal Services	602.50	
Office Rent	6,040.00	
Telephone and Telegrams	1,992.30	
Service Charge for Handling Securities	3,554.44	
Prints and Slides	371.53	
Posters and Signs	155.46	
Expenses—Witmer Stone Sanctuary	238.63	
Food—Audubon Nature Camp	2,658.87	
Forward	$166,167.23	$170,871.21

Working Funds:	Brought forward	$166,167.23	$170,871.21
—*Expenses:* (continued)			
Amortization of Deferred Promotion Expense—Audubon Nature Camp		1,041.66	
Electric Light		558.76	
Traveling Expenses		594.68	
Real-Estate Operations		11,535.32	
Expenses Incurred for Protection of Mortgages		982.05	
Dredging Canal—Rainey Sanctuary		1,516.66	
Accounting		600.00	
Annual Meeting Expenses		1,262.93	
Essay Contest		579.89	
Contribution—Maintenance Hawk Mountain Sanctuary		400.00	
Investigating Eagle Situation		510.00	
Condor Observation		270.00	
Hawk Survey		77.38	
Drainage—Lecturing and Miscellaneous		397.69	
Expenses Attending Conventions		562.78	
Library and Exhibit Expense		520.30	
Soliciting for Sanctuary Funds		659.56	
Sundry Expenses		4,261.35	
Total Working Funds Expenses			192,498.24
Total Working Funds Deficit			$21,627.03
Non-Working Funds:			
Income:			
Life Memberships	$1,100.00		
Bequests	15,166.97		
Gifts	5.00		
Contributions to Building Fund	515.00		
Interest on Real-Estate Mortgages	745.00		
Interest on Bonds	2,935.74		
Dividends on Stocks	1,245.00		
Net Profit from Sale of Securities	9,377.80		
Rents—Real Estate	571.12		
Total Income		$31,661.63	
Disbursements:			
Service Charge for Handling Securities	$649.77		
Expenses of Real-Estate Properties	425.54		
Total Disbursements		1,075.31	
Net Income—Non-Working Funds			30,586.32
Excess of Income over Disbursements			$8,959.29
Add:			
Projector Donated		$85.00	
Inventory October 10, 1935 Adjustment		182.00	
			267.00
	Forward		$9,226.29

Brought forward		$9,226.29
Deduct:		
1934 Compensation Insurance	$46.79	
Depreciation of Furniture and Fixtures	812.62	
		659.41
Net Increase of Fund Balances		$8,366.88
Net Increase of Fund Balances.		
Total Fund Balances September 30, 1936	$1,671,976.66	
Total Fund Balances October 10, 1935	1,663,609.78	
Net Increase	$8,366.88	

We certify that the appended Balance Sheet is, in our opinion, properly drawn up and shows the true financial position of the Association as at September 30, 1936, and that the combined Income and Expense Statement is a fair and correct statement of earnings for the fiscal year ended that date, subject to comments in our detailed report submitted under date of October 22, 1936.—JOHN H. KOCH & CO., *Certified Public Accountants.*

Members wishing more detailed information may secure it from the office of the National Association of Audubon Societies, 1775 Broadway, New York.

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